American Journal of Public Health
and THE NATION'S HEALTH

Volume 33 December, 1943 Number 12

Penicillin Treatment of Early Syphilis*

A Preliminary Report

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THE number of diseases and infections which are favorably influenced by penicillin therapy continues to increase as experience in the use of the drug is gained. It is the purpose of the present report to record, in a preliminary way, certain observations which have been made in four patients with early syphilis (primary) who were treated with penicillin only.

A study of the usefulness of the drug in the management of syphilis was undertaken after limited animal experimentation indicated that penicillin possessed some spirocheticidal activity. The plan of study embraced the concurrent carrying out of a complete delineation of the effectiveness of the drug in experimental syphilis in rabbits and the conduct of a small pilot study of the effects produced in patients with early disease. The prompt resort to the human being was sponsored by the general non-toxic character of the drug and by the knowledge that observations as to early effectiveness could be carried out without placing in jeopardy the patient's chance for ultimate recovery in event it became expedient to resort to conventional arsenic therapy.

The early results in the animal phase of the general study indicate that the time-dose relationship will prove to be as important in this therapy as in the use of other chemotherapeutic agents. Failures to sterilize experimentally infected animals with treatment schedules which utilize minimal amounts of the drug over a brief treatment period are predictable. The results from treat-

* From U. S. Marine Hospital, Staten Island, N. Y. Medical Director William Y. Hollingsworth in Charge.

This study was undertaken at the request of the Committee on Chemotherapeutic and other Agents, Division of Medical Sciences, National Research Council, acting for the Committee on Medical Research of the Office of Scientific Research and Development. The penicillin was furnished through a contract between the Office of Scientific Research and Development and the Massachusetts Memorial Hospitals.

Presented before the Epidemiology Section of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

RESULTS OF SEROLOGY

Case 1—L. W. Hospital No. 116769. Duration of Disease—9 Days.

Days after Start of Therapy	Qualitative Methods							Quantitative Methods		
	Kline Excl. Pption.	Mazzini Floc.	Kline Diag. Pption.	Kahn Std. Pption.	Hinton Floc.	Eagle Floc.	Kolmer Simp. C. F.	Mazzini Floc.	Kahn Pption.	Kolmer Comp. Fix.
0	..	4	..	4	Pos.	Pos.	4	4 4 4 2 1 —	4 4 4 2 ± —	4 4 4 4 4 1
1	..	4	..	4	Pos.	Pos.	4	4 4 4 2 1 —	4 4 4 2 ± —	4 4 4 4 4 3
9	4	4	4	4	Pos.	Pos.	4	4 4 4 4 2 —	4 4 4 4 1 —	4 4 4 4 2 —
23	..	4	..	3	Pos.	Pos.	4	4 3 2 — — —	4 4 1 — — —	4 4 4 3 ± —
30	4	4	3	3	Pos.	—	4	4 4 4 2 — —	4 4 3 1 — —	4 4 4 2 ± —
37	4	4	1 Dbt.	3	Dbt.	—	3	4 4 2 1 — —	4 1 — — — —	3 3 2 ± — —
44	3	4	—	1 Dbt.	—	—	4	4 3 2 — — —	4 ± — — — —	4 4 3 ± — —
51	1 Dbt.	4	—	—	—	—	4	4 2 — — — —	1 — — — — —	4 4 4 1 ± —
58	1 Dbt.	4	—	—	—	—	—	4 3 — — — —	1 — — — — —	— — — — — —
65	2	2 Dbt.	—	—	—	—	—	2 1 — — — —	— — — — — —	— — — — — —
72	1 Dbt.	2 Dbt.	—	—	—	—	—	2 1 — — — —	— — — — — —	— — — — — —
80	—	2 Dbt.	—	—	QNS	—	—	2 ± — —	± — — — —	— — — — — —
86	—	2 Dbt.	—	—	—	—	—	2 —	— —	— — — — —
93	—	1 Dbt.	—	—	—	—	—	1 —		
101	± Dbt.	1 Dbt.	—	—	—	—	—	1 —		

RESULTS OF SEROLOGY

Case 2—E. D. Hospital No. 117096. Duration of Disease—10 Days.

Days after Start of Therapy	Qualitative Methods							Quantitative Methods		
	Kline Excl. Pption.	Mazzini Floc.	Kline Diag. Pption.	Kahn Std. Pption.	Hinton Floc.	Eagle Floc.	Kolmer Simp. C. F.	Mazzini Floc.	Kahn Pption.	Kolmer Comp. Fix.
0	3	3	± Dbt.	3	Pos.	Pos.	4	2 1 — — — —	4 2 — — — —	4 4 3 1 ± —
1	4	4	± Dbt.	3	Pos.	Pos.	4	2 1 — — — —	4 1 — — — —	4 4 4 3 — —
9	..	4	..	3	Pos.	Pos.	4	4 2 — — — —	4 2 — — — —	4 4 3 ± — —
23	1 Dbt.	2 Dbt.	—	2	—	—	4	2 1 — — — —	4 ± — — — —	4 3 1 — — —
30	1 Dbt.	1 Dbt.	—	± Dbt.	—	—	1	1 — — — — —	2 — — — — —	1 2 ± — — —
37	—	1 Dbt.	—	—	—	—	± Dbt.	1 — — — — —	1 — — — — —	± ± — — — —
44	—	—	—	—	..	—	4	— — — — — —	— — — — — —	4 3 2 1 ± —
51	—	1 Dbt.	—	—	—	—	—	1 — — — — —	— — — — — —	— — — — — —
58	—	—	—	—	—	—	—	— — — — — —	— — — — — —	— — — — — —
65	—	—	—	—	—	—	—	— — — — — —	— — — — — —	— — — — — —
72	—	—	—	—	—	—	—	— — — —	— — — — — —	— — — —
79	—	—	—	—	—	—	—	— —	— — — — — —	— —
94	—	—	—	—	—	—	—			

RESULTS OF SEROLOGY

Case 3—H. J. Hospital No. 117136. Duration of Disease—8 Days.

Days after Start of Therapy	Qualitative Methods							Quantitative Methods		
	Kline Excl. Pption.	Mazzini Floc.	Kline Diag. Pption.	Kahn Std. Pption.	Hinton Floc.	Eagle Floc.	Kolmer Simp. C. F.	Mazzini Floc.	Kahn Pption.	Kolmer Comp. Fix.
0	4	4	2	4	Pos.	Pos.	4	4 3 2 1 — —	4 4 4 4 2 —	4 4 4 4 3 1
1	3	4	2	4	Pos.	Pos.	4	4 4 2 1 1 —	4 4 4 4 2 —	4 4 4 4 4 3 1
8	..	4	..	4	Pos.	Pos.	4	4 4 3 1 1 —	4 4 4 3 2 ±	4 4 4 4 1 ±
15	..	4	..	3	Pos.	Pos.	4	3 3 2 1 1 —	4 4 4 2 ± —	4 4 4 4 4 2
22	3	3	1 Dbt.	2	Pos.	—	4	2 1 1 1 — —	4 3 1 1 — —	4 4 4 4 4 ±
29	1 Dbt.	1 Dbt.	—	2	Dbt.	—	4	1 1 1 — — —	2 ± ± — — —	4 4 4 4 4 —
36	—	1 Dbt.	—	—	—	—	2	1 1 1 — — —	± — — — — —	2 1 2 ± — —
43	—	—	—	—	—	—	4	— — — — — —	± — — — — —	4 4 4 3 1 —
50	—	—	—	—	—	—	—	— — — — — —	— — — — — —	— ± 1 ± — —
57	—	1 Dbt.	—	—	—	—	—	1 — — — — —	— — — — — —	— ± 1 — — —
64	—	—	—	—	—	—	—	— — — — — —	± — — — — —	— — — — — —
71	± Dbt.	1 Dbt.	—	—	—	—	—	1 — — —	— — — — —	— — — — —
78	—	—	—	—	—	—	—	— —	— —	
85	—	1 Dbt.	—	—	—	—	—	1 —		
93	—	—	—	—	—	—	—			

RESULTS OF SEROLOGY

Case 4—S. J. Hospital No. 117491. Duration of Disease—8 Days.

Days after Start of Therapy	Qualitative Methods							Quantitative Methods		
	Kline Excl. Pption.	Mazzini Floc.	Kline Diag. Pption.	Kahn Std. Pption.	Hinton Floc.	Eagle Floc.	Kolmer Simp. C. F.	Mazzini Floc.	Kahn Pption.	Kolmer Comp. Fix.
0	..	1 Dbt.	..	—	—	—	—	— — — — — —	— — — — — —	— — — — — —
1	4	4	± Dbt.	1 Dbt.	—	Pos.	—	2 1 — — — —	3 ± — — — —	± ± ± — — —
8	..	4	..	3	—	Pos.	4	3 2 — — — —	4 4 ± — — —	4 4 4 2 ± —
15	4	4	1 Dbt.	3	Pos.	Pos.	± Dbt.	4 3 2 1 — —	4 3 1 — — —	± ± ± ± — —
22	4	3	± Dbt.	3	Pos.	Dbt.	± Dbt.	3 1 — — — —	4 1 ± — — —	± 1 ± — — —
30	1 Dbt.	2 Dbt.	± Dbt.	—	Dbt.	—	± Dbt.	2 1 — — — —	1 — — — — —	± ± 1 ± — —
36	± Dbt.	2 Dbt.	—	—	—	—	—	2 — — — — —	± — — — — —	— — ± ± ± —
43	—	2 Dbt.	—	—	—	—	—	2 1 — — — —	± — — — — —	— — — — — —
50	± Dbt.	1 Dbt.	—	—	—	—	—	1 — — — — —	— — — — — —	— — — — — —
57	—	1 Dbt.	—	—	—	—	—	1 — — — — —	± — — — — —	— — — — — —
64	± Dbt.	1 Dbt.	—	—	—	—	—	1 — — —	— — — —	— — — —
71	—	—	—	—	—	—	—	— —	— —	— — — — —
86	—	—	—	—	—	—	—			

ment schedules which utilize larger amounts of the drug and more prolonged treatment periods will require observation for approximately one year for complete evaluation.

Four male patients have been treated and observed for a period sufficiently long to permit comparison with results produced by more conventional forms of treatment. Each patient displayed a single penile ulceration. Darkfield examination revealed characteristic *Treponema pallidum* in numbers varying from 2 to 10 per microscope field. The duration of the ulcerations averaged 8 days. Not any local or systemic therapy was employed other than that recorded below. The serologic status prior to therapy is indicated in the individual charts.

The penicillin treatment consisted of an intramuscular injection of 25,000 units of the drug at 4 hour intervals, night and day, for 8 days. The total number of injections was 48, and the total amount of the drug was 1,200,000 units. The gluteal muscle was the site of injection.

Darkfield studies of secretions collected from the primary lesions were carried out at 4 hour intervals following the beginning of treatment. Not any spiral forms were observed after the 16th hour.

Some mild but definite clinical manifestations were observed during the first 8 hours of treatment. The patients complained of general malaise and mild headache. Temperature elevations not in excess of 2°F. were recorded. The penile lesions became painful and the regional lymph glands became enlarged and tender. One patient displayed a maculo-papular skin eruption resembling secondary syphilis over the trunk and thighs. The eruption was of short duration. No symptoms, either early or late, were observed which could be construed as representing toxic response to the drug. The repeated use of the gluteal muscles as a site for injection did not give rise to irritative sequelae.

Because of the importance of the serologic reactions as an index of the response to treatment, a comprehensive routine of serodiagnostic tests was employed. As representative of the supersensitive procedures, the Kline Exclusion method was included. Of the flocculation tests set at a diagnostic level, the Kline Diagnostic, the Kahn Standard, the Eagle, Hinton, and Mazzini were employed. The Kolmer technic was the only complement-fixation method used. In addition to the above, quantitative titrations were carried out utilizing the Kolmer, Kahn, and Mazzini methods. The results produced by the various methods are displayed in the individual charts.

The results of the blood studies indicate that the therapy was responsible for a more or less rapid and complete disappearance from the blood stream of the reacting substance which is measured by the various tests and which is usually associated with activity in early syphilis.

The further observation of the group of patients will be maintained upon a weekly basis for as long as possible for the purpose of detecting any tendency toward a recurrence of positive serologic findings and for the recording of evidence of clinical relapse. The patients will again be hospitalized for the collection of a specimen of spinal fluid and for a complete medical survey at the expiration of 6 months post-treatment observation. Subsequent hospitalization for special study will be repeated as frequently as may seem desirable. To the information supplied by this group will be added the contributions supplied by additional patients treated in an identical manner until the total material is of dimensions which warrant the drawing of final and sound conclusions.

Should the more extensive and pro-

longed experience confirm the impression which is to be gained from the pilot study, a rebuilding of the structure of syphilis therapy may become necessary. The development of an optimal therapy will require carefully controlled studies designed to determine the most effective relationship between the amount of drug and the duration of the treatment period. Also the rôle of the treatment in latent disease and visceral and central nervous system syphilis will require careful scrutiny before the reasonably effective measures which are available at present may be replaced by a therapy based upon penicillin. Because of the long post treatment period of observation which is a requisite for the evaluation of a syphilis therapy, the progress toward the adoption of a new mode of treatment must, of necessity, be deliberate.

Penicillin Therapy in Sulfonamide-Resistant Gonorrhea in Men*

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BECAUSE of the limited supply of penicillin, most of which is required for the treatment of the more serious infections, the developmental work in penicillin therapy of gonorrhea has not advanced as rapidly as might seem desirable. The results recorded herein indicate, however, that a larger supply may significantly affect both the method of treating the individual patient and the incidence of the disease.

Up to the present only two reports dealing with the general subject have appeared in American literature. The initial publication was that of Herrell, Cook, and Thompson[1] which presented the results obtained in the treatment of 5 patients with sulfonamide-resistant gonorrhea. Intravenous administration was practised and the results were favorable. The second report[2] dealt with the preliminary findings in a group of 75 male patients treated with penicillin in a uniform manner.

This second report is reviewed briefly in order to correlate it with the results of the later time-dose ratio investigations.

The patients included in the previously reported group were young men in a good state of health with the exception of the gonococcic urethritis. All had failed to attain cure through one or more courses of sulfonamide drugs. The average duration of disease at the time of penicillin therapy was 45 days. The diagnosis was confirmed by positive spread and culture findings. The treatment consisted of the intramuscular injection of 10,000 units of the drug every 3 hours for a total of 16 injections. This schedule provided a treatment period of 45 hours.

This therapy resulted in 74 satisfactory results and one instance of failure which could be directly charged to the drug. An additional patient underwent a recurrence of clinical gonorrhea and has been classed as a relapse, although the possibility of reinfection was present. There was no evidence of immediate or delayed toxicity.

The routine dosage of 160,000 units of penicillin over a 45 hour period, represented an arbitrary selection. That it represented the use of an excessive amount of the drug was appreciated. The second portion of the general study concerns itself with the determination of the minimal amounts of drug and the shortest treatment period which would produce an acceptable cure rate. In approaching this problem varying schedules of dosage and treatment periods were surveyed in 5 additional patient groups. As in the preliminary group of 75 patients, penicillin was administered intramuscularly to these patients only after the diagnosis had been con-

* From U. S. Marine Hospital, Staten Island, N. Y. Medical Director William Y. Hollingsworth in Charge.

Presented before the Epidemiology Section of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

CHART I

Penicillin Therapy in Gonorrhea

Group	Number Treated	Number Cured	Number of Doses	Units per Dose	Total Dosage
A	75	74	16	10,000	160,000
B	23	23	5	20,000	100,000
C	25	21	4	25,000	100,000
D	25	24	5	15,000	75,000
E	15	12	5	10,000	50,000
F	15	15	6	20,000	120,000

firmed by culture findings. These further treatment schedules were as follows:

Schedule B—There were 23 patients in this group; 21 had not responded to previous sulfonamide therapy. Each received 5 intramuscular injections of 20,000 units of penicillin at 3 hour intervals. The period of treatment was 12 hours, and the total amount of drug, 100,000 units. All of the patients of this group satisfied the criteria of cure and in follow-up observations, amounting to 14 weeks in some instances, did not show any tendency toward a recurrence of symptoms.

Schedule C—A total of 25 patients were treated by intramuscular injections of 25,000 units given at 3 hour intervals for a total of 4 injections. Eight had not received sulfonamides. The total amount of drug was 100,000 units, and the treatment period 9 hours. Twenty-one of the patients of this group attained satisfactory results and 4 failed.

Schedule D—In this series of 25 patients, 6 of whom were without previous sulfonamide therapy, the total dosage was reduced to 75,000 units. Injections of 15,000 units were given at 3 hour intervals, a total of 5 injections covering a 12 hour treatment period. There was one patient in this group who was classed as a treatment failure.

Schedule E—In a group of 15 patients (only 2 had not been treated with sulfonamides) the total amount of drug was reduced to 50,000 units. Intramuscular injections of 10,000 units were given at 3 hour intervals for a total of 5 injections over a treatment period of 12 hours. Three of the patients of this group were classed as treatment failures. Two of these three failure cases were treated a few days later with a total of 120,000 units as described in Schedule

F. Both of these patients were cured.

Schedule F—A total of 15 patients were included in this series. Sulfonamide therapy had failed in 11 of the 15. The total dosage was increased to 120,000 units administered at 3 hour intervals for 6 injections over a treatment period of 15 hours. All of the patients in this group were classed, tentatively, as having attained cure status. This group was in the process of being expanded to adequate proportions at the time this research was halted.

DISCUSSION

The response of gonorrhea to penicillin therapy has been dramatic. The matter of ascertaining the minimal amount of the drug which is effective is important because of the limited supply, cost, and usefulness of the drug in more serious infections. From the results obtained by the patients in the various groups it seems logical that one optimal treatment routine will call for 120,000 units of penicillin administered over a 15 hour period. It is obvious that the group must be enlarged before final conclusions can be drawn and that further experience may point to a more accurate refinement of this schedule.

Because of the present need for conserving penicillin a second optimal treatment schedule could call for 50,000 units, possibly similar to that employed in Schedule E, and the re-treatment of the failures with larger dosage.

There was no apparent difference in the response of gonococcic infections to penicillin between untreated patients and those who had failed to respond to the administration of sulfonamides.

CONCLUSIONS

A treatment schedule consisting of 6 intramuscular injections of 20,000 units of penicillin, administered at 3 hour intervals over a treatment period of 15 hours, was found to be satisfactory in the management of gonorrhea in men.

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Planning Today for Public Health Administration Tomorrow*

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MEASURED by individual and collective health of our people, we, as public health workers, can derive satisfaction from our view of the attainments which have led up to the present state of efficiency in our field. As we make ready to tackle further and more difficult problems, we gain a new enthusiasm from obstacles already overcome. A review of public health progress and developments at each annual meeting, serving as it does as a tonic and a stimulus to further achievement, has become traditional. However, the urgency of the conference this year suggests that we omit this time-honored reflection in the interest of more pressing considerations.

Since the outbreak of the war, public health has gone far in protecting troops and civilians alike from disease. Measures developed during peacetime and wartime have been put to work on every front, with the result that few serious epidemics have occurred. The health status of the American people has been comparatively good. This contribution to the efficiency of the war effort and to ultimate victory is recognized.

Now that we are beginning to turn our eyes to the winning of the peace, it becomes no less important that we have a strong, physically fit population. Civilization will have to be rebuilt on a more enduring basis, and public health will be a vital factor in attaining this goal. Already it is one of the principal subjects of discussions and considerations of post-war planning by medical and public health organizations in this country.

As distances evaporate, we suddenly find ourselves one large neighborhood or community in which there can be no absolute or lasting security for any one group unless such security be provided for all. Particularly is this true with regard to *health* security. Many diseases which seem remote because of our excellent public health structure, which it has taken more than seventy years to build, still present a problem in other areas not so fortunate as to have the benefit of years of health experience. Transmission of these diseases to the unaffected populations grows increasingly apparent. The speed of air travel from every section of the globe will make it difficult always to detect disease carriers. Likewise, the dislocation of populations presents problems of tuberculosis control, dysentery, malaria, and others unless health measures for control are adequate. Potentially dangerous conditions which might establish new disease problems in this country or aggravate old ones loom on the public health horizon at this time and present a maze of new and complex problems for solution. Whatever ingenuity and resourcefulness may be necessary to untangle these problems, public health

* Presidential Address delivered before the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 12, 1943.

forces in this country as well as in other countries can be counted upon to apply. Public health workers have never shied away from hard and difficult tasks and they will not do so now when so much depends upon individual and collective efforts.

These goals which we are setting call for a public health organization of the most efficient character. Planning is already under way. Urgency of immediate needs must not be allowed to overshadow the plans for the future. Our public health plans for the future—that is, after the war—are being laid now, notwithstanding the extreme shortages of public health and medical personnel taken up by the armed forces and war industries. I am thinking particularly of diseases that may be brought home from the battlefields of the world, especially tropical diseases such as various forms of malaria and the dysenteries, because until recently medical science had been unable to cope successfully with these diseases. Efforts of all public health workers must be combined with sound, intelligent thinking and action. Make no mistake, there is a tremendous job ahead. If it is well executed, there will be few idle moments on anyone's hands.

It is believed necessary to consider first our doorstep problems. The word "doorstep" is preferred to "home front" because we certainly must remove whatever is on our own doorstep before we can travel beyond.

Doorstep diseases that present a serious threat to public health and will respond to a sound program of control are the deficiency diseases, malaria, gastrointestinal ailments, typhoid fever, various infectious diseases, and problems of rehabilitation arising out of the war. We must catch up with the work which was already pending before this crisis—and some of it has been pending for fifty years. To tolerate the existence of wholly preventable diseases in our midst (typhoid fever as an example) is disgraceful. We can and must eliminate these conditions responsible for lowering the physical and economic status of our people. This is our first mission as public health workers.

Personal application and appreciation of public health is an essential doorstep problem. Absorption of the great public health truths because of association with public health has not worked. Some guidance is absolutely necessary.

Too few of the health departments of the country are following the notable example of efficient industrial organizations and others in keeping employee health records. From the standpoint of the organization and the individual, is it not a good thing? We cannot hope for the most effective results in our health teachings until such time as public health workers personally apply the protective measures they advocate. The fact that great numbers are not now doing so would indicate a need real and urgent. There has been a tremendous turnover in personnel since the outbreak of the war and a fertile field provided for educating a large number of people. Many of these new workers have had their first glimpse into the workings of public health. The requirements for a health check-up periodically must be set forth. Human nature being what it is, some prodding is often necessary among the best of us. This should, therefore, be the responsibility of the organization. Essential records should be kept for the purpose of informing individuals of such things as needed immunizations, chest x-rays, laboratory tests, periodic physical check-ups, dental certificates, and so on. Once such a routine is established, the employee will discover the security and satisfaction which comes from eliminating preventable disease worries and physical incapacities. Active tuberculosis in a health department spreads in the same way as active

tuberculosis outside the health department. As depicted in "Susan and God," sometimes it seems that we go forth in every direction to do public good, leaving our own household unattended.

And still another doorstep problem is the organization of public health at the local level. Until each of the more than three thousand counties in the United States has within reach, either through a district health department or a county health department, full-time health protection, we should not consider lend-leasing public health. Like schools, churches, post offices, public health must be "on the ground" to serve the people. And just one word in behalf of housing community health programs: We should not be satisfied to undertake one of the most important social security programs from the basement of the courthouse or the third floor of a run-down office building. We should insist upon adequate public health facilities.

The horizon of public health presents many problems which must be solved without delay. There is a clamor for increased services in every direction. This tremendous load thrust upon the shoulders of public health would be too great a task to assume alone; but the vast facilities of the medical, dental, nursing and allied professions are being utilized. Participation on the part of physicians, public health workers, and others is necessary, but it is likewise necessary that the individual be urged on by education to assume an increasing share of personal responsibility for putting to work the vast knowledge which has been accumulated regarding sound health practices. Long-wished-for development of effective measures against such diseases as malaria, cardiovascular diseases, cancer, tuberculosis, virus infections, and certain mental afflictions will provide still further public health tools to utilize in the program for the welfare of mankind. In the meantime, while looking forward in happy anticipation to such developments, it might prove of more immediate value to try to perfect some of the tools we already have—many becoming rusty from disuse.

To prevent physical incapacities and disease and to promote health, the periodic health check-up for the general population has long been a paramount item in our public health teaching. No worker has failed to point out its value. If we are to keep faith with those to whom we have advocated this procedure, I think it is time to plan for a greater thoroughness in its performance. The American Medical Association, in its desire to help the physician to fulfil certain minimum essentials in conducting the periodic health examination, has issued a manual. In the hands of every member of the profession, this manual would be a public health wedge. In the introductory pages the following statements are found:

> The periodic health examination serves to measure the present health status of the individual, subject to the qualification that obscure or insidious disease may not always be discoverable by methods at present available. Further, the examination discloses habits of living and environmental factors which may be unhealthful but susceptible of correction. Finally, of course, it gives opportunity for treatment of early or preclinical stages of disease . . . The personal health inventory or periodic health examination, under whatever name it may become most widely known, must be regarded as a concept which has appealed to the intelligent elements of the American people to a somewhat limited extent, but which has in it enough promise of better health to warrant its more widespread popularization and adoption by increasing numbers of our people.[1]

Other groups share the responsibility for the public's lack of response to this vitally important health measure. If we hope to divert the public from the ineffective over-the-counter drugstore

practice and the resort to numberless proprietary remedies and patent medicines, to say nothing of the illegal practitioners, something specific must be set forth. Once this is accomplished by a competent committee, such as may be found within the American Medical Association, and put into force by the nation's physicians, one of the major hurdles will be over. Having something definite to sell, it will be much easier for the advocates of the health check-up to sell it.

Sufficient experience in recent years enables the keen observer to realize that a greater program of physician-public health coöperation and participation is not only desirable but also essential in accomplishing the task before us.

Consider the venereal disease program as one example of a disease problem involving great numbers of the population, and presenting a constant threat to public health. It is inconceivable that the progress made to date could have been achieved by either the medical profession or public health organizations working independently of each other. All along, we need a program of participation of physicians aiding the public health program and the health department helping the physician —both serving the health needs of the individual. The dental profession has also coöperated in the public health program and made possible greater progress in this direction. Hospitals are now coöperating with public health in making available service for the wives of soldiers under the emergency maternity and infant care program.

Today we turn our thinking to all community resources realizing that without them our efforts will fail. Brought closer together by the emergency of war, we will not relax our efforts and will not allow worth while programs to decay because of lack of pressure caused by the emergency. I do not need to point out to you what became of our venereal disease program after the last war—but let this be a reminder that the momentum behind our programs established on a wartime basis must be great enough to continue these as peacetime programs, if need still exists.

As we look ahead, there should be a joining of hands and of hearts of all forces. We now prepare for one of the biggest jobs of all times—that of rehabilitation, rebuilding, and restoration. The states owe a great deal to the U. S. Public Health Service, the Children's Bureau, and other federal agencies, and nonofficial agencies for their fine cooperation and economic assistance. Greater uniformity of procedure among all the states has been achieved as a result of the federal-state relationship in public health. It is true that federal-state relationships with respect to public health administrative policies might be strengthened and made more effective in some instances. We all realize that personnel delegated to work with state and local forces on wartime public health programs have injected varying policies with regard to salary scale, hours of employment, leave, and so on, into public health administration. These obstacles though not great have caused conflicts within the organization. It would doubtless be difficult to have these employees conform fully to the policies of the organization to which they are assigned, but, in due time, these problems will be eliminated.

Thinking of the need of this federal assistance, there is brought forcibly to our attention the impact of the demand for birth certificates created by the war. States operating on a two year appropriation could not expand sufficiently to meet this overwhelming demand, and if it had not been for the fact that we were able to use a small amount of federal funds to keep our heads above water, we would not today be able to

have this important function retained where it rightfully belongs. Being aware of the importance of these vital records to the health program of the United States, a transfer of this function is being sought in order that the U. S. Public Health Service may assist the state divisions of vital statistics to improve registration and to render to the citizens of the states a uniform service. Without such assistance, the states will carry on a less effective service. This is one field that has not been covered by federal assistance in previous years. We have not tapped our resources with regard to public health statistics.

There are other fields opening up for federal assistance. Heretofore, states have operated tuberculosis hospitals and mental hospitals without federal assistance. These might be materially benefited if federal assistance were available. The field here is fertile. For years we have known the value of isolation and early treatment of cases in disease control. Facilities should be made available for an extension of these weapons.

Federal-state relationships can always be maintained on a mutually agreeable basis if each is alert and open-minded. We must guard against invasion of domains, but likewise we must welcome outside assistance that will strengthen. If disease recognizes no barriers and travels freely from one state to another, then public health regulations in certain instances will have to know no barriers and will have to look to interstate control measures. This same policy will one day be applied to global thinking as stricter examinations are required of those entering this country. We help most when we help others to help themselves. This should be our test of assistance whether it be at the global level, the federal level, the state level, or the local level. And our programs of assistance should always be tested by the one measuring rod that will always keep us in the middle of the road in so far as policies and procedures are concerned—"We should not do for the individual what the individual can well do for himself."

We have not been neglecting altogether global health. Today American-trained public health workers are in Alaska, India, South America and Central America, several European countries, and all places where our armed forces now are operating. As we improve and make more effective our own local public health program, we cultivate a fertile field for the training of global public health workers. We can be of no greater assistance to our neighbors in this world community than to afford opportunities for observation and training. In so far as we ourselves build a sound public health program we assist our neighbors. To assist us in this field, we can now draw upon improved facilities for diagnosis and treatment made possible during the past few years and by wartime developments. Yesterday a chest x-ray was available only to a few; today it may be used as a part of a routine periodic check-up.

In entire counties in many sections of the country all of the public school teachers and pupils of every grade in the school are being given physical examinations periodically — examinations which include chest x-rays, blood tests, and other necessary laboratory tests. This is routine in many of our American communities. All of this and more will be available to people of all countries of the world when the value of public health is accepted internationally.

Greater laboratory facilities, and other aids to diagnosis have brought us a great distance. All of these will be helpful, and we can rightfully expect to see public health integrated into the post-war pattern. It is up to us to furnish the cloth—or the trained public health workers. If we were to say today that we need five thousand trained

public health workers, not one of us could point to a supply. However, if tomorrow we need ten thousand trained public health workers, some of the supply will come from definite training programs which are being instituted in each of the forty-eight states by means of federal assistance, interested philanthropic foundations and funds in this country. The supply of nurses will be greatly increased. The need for trained workers cannot be given too much emphasis. Today we have workers trained in the science of public health to carry on the program. Our number, however, is entirely too small for present, to say nothing of future, public health needs.

Like a pebble dropped in a pool, public health begins with the smallest area (the family), then extends to the community, the state, and the nation, and now may extend to all shores beyond. From this close association as a member of a world neighborhood, we will benefit from an exchange of ideas, from an exchange of public health plans. Public health seed can grow where the soil is fertile, where public opinion is favorable. Much soil must be fertilized. The maximum development of the individual from the standpoint of health and physical fitness must be accomplished if progress is to be made and civilization advance. American public health leadership accepts, after more than seventy years of preparation, the challenge, and pledges its full resources and talents to the continued conquest of disease in our own country and abroad.

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The Evolving Pattern of Tomorrow's Health

I. Prerequisites to Improved Public Health*

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OBVIOUSLY, the first prerequisite to improvement of public health in any locality is a properly constituted health department. As quickly as possible, therefore, all areas and all population units should be provided with modern local health agencies directed by trained medical health officers.

In this undertaking, as well as in others to be discussed later, we shall probably be compelled to begin from a point considerably behind that which we had reached in 1940. That year will serve as a good point of reference, since it is the last year in which conditions were more or less normal.

Of the 3,070 counties in the continental United States, only 655 in 1940 had independent full-time health departments, and 356 had combined with adjoining counties to form local health districts. The remaining two-thirds were without formal health organizations under local auspices. As a rule, only those cities with populations approaching 100,000 employed full-time medical health officers and arranged their health services along modern lines.

Recognizing that the goals of public health cannot be attained through the 38,000-odd units which now make up the political mosaic of this country, the Subcommittee on Local Health Units of the Committee on Administrative Practice has suggested the grouping of counties and their contained municipalities in such a way as to derive 1,127 local jurisdictions. Wherever practicable, these units contain not less than 50,000 population, all of whom reside within 40 miles of the principal trading center of the area. Counties rather than state administrative districts were used in map making, since it was believed that the people to be served will wish to have a voice in the management of their institutions; consequently, they should also bear part of the financial burden.

To the more experienced and weather-beaten health administrators, such a scheme of redistricting may seem entirely visionary and beyond the realm of accomplishment. They know the difficulties inherent in bringing about and perpetuating effective working relationships between political bodies. In the future, however, funds for local health services are likely to be derived in greater measure from state and federal sources than has

* Presented at a Special Session of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

heretofore been the case. With greater centralization of financing, the problem of amalgamation at the local level is certain to become less difficult. Either the scheme suggested by the subcommittee or some modification of it should be accepted by the professional groups without further delay, since plans for the future are dependent upon the establishment of rational service areas. In any event, the structures of state and federal health agencies will need to be strengthened so that they may be in position to supply certain specialized services beyond the resources of local jurisdictions.

When the full-time professional and technical personnel employed by health departments prior to the war are contrasted with the requirements of this proposed scheme of organization, approximately the following deficiencies are noted, despite the decreased number of local jurisdictions and consequent savings in personnel: physicians, 45 per cent; dentists, more than 90 per cent; engineers, 60 per cent; other sanitation personnel, 50 per cent; nurses (public health and visiting nurse services) 75 per cent; laboratory technicians, 45 per cent; and other professional personnel, about 50 per cent. Considerable reduction in these estimates, especially for nurses, could be effected by the employment of auxiliary personnel whose preparation need not be of professional grade. Nevertheless, such a reorganization would involve training programs that exceed present facilities. In addition, arrangements must be made for preparation of those representing normal replacements and of new recruits needed to fill the vacancies made by those who, for one reason or another, do not return after the war.

On the negative side, there seems little hope of attracting to public health work persons of the right types in numbers sufficient for future needs unless provision is made for selection and promotion on a merit basis, together with reasonable compensation and retirement benefits. Despite innumerable present handicaps, states are rapidly developing their merit system rules and framework of organization. This plan needs to be extended to the local level. Mere installation of a merit system, however, is no guarantee of successful administration; unless the plan has the active support of the workers themselves, backed by their professional bodies, abuses are almost certain to creep in and discredit the system.

In the future, more attention must be given to the quarters health departments occupy. Common decency and self-respect require that health departments be taken out of basements of county court houses and condemned school buildings. The technical nature of those services that health departments will be expected to perform is a more compelling reason for providing proper surroundings and facilities for carrying on the work. Since the start in this direction will be made practically from scratch, we may assume that each of the 1,127 health departments will require a headquarters building costing at least $75,000. Not fewer than two secondary health centers will be needed for most of the health jurisdictions. Each of these will cost as much as $35,000, based on current construction prices.

Turning now to sanitation facilities, one still may find many needs that must be satisfied if public health is to go forward. Take, for example, public water supplies, one of the oldest and most fundamental of public health interests. It is estimated that 4,860 communities will need new public water supplies, and extension or improvement will be required for 6,450 of the present systems. Based on current costs, the new systems will entail an expenditure of $180,000,000 and the exten-

sions and improvements, $503,000,000.

Second in importance—and a close second at that—is the proper collection and disposal of sewage. A conservative estimate is that 7,690 communities will require new sewer systems and that 5,475 systems now functioning will need extension and repairs when construction can be resumed. The cost of such construction will probably approach $605,000,000. Installation of new facilities for treatment of domestic sewage and industrial waste through municipal systems for about 10,500 communities and expansion of present facilities for another 2,000 are regarded as essential for safety. An expenditure of roughly $1,380,000,000 will be needed to effect such improvements in community sanitation.

There are still approximately 4,000,000 rural homes that either have no excreta disposal facilities or are served by insanitary toilets. The estimated cost of providing the minimum accommodations, namely, sanitary privies, is $140,000,000. Rural domestic water supplies, likewise, are far from satisfactory. About 3,600,000 rural homes are estimated to need new or improved supplies. The total cost of safeguarding this number of private rural water supplies would be about $180,000,000.

With the type of industrial and agricultural economy prevailing in the continental United States, the hazards of insect-borne and parasitic diseases should be minimal if suitable provisions for necessary construction and maintenance were incorporated in programs of public work. Even malaria need no longer be tolerated. Blood surveys conducted around military establishments and war industries in malarious areas during the past year show the parasite index to be less than two-tenths of one per cent—the lowest on record. Furthermore, the disease is now perpetuated through a limited number of endemic foci. Barring the introduction and establishment of new strains of the parasite or the occurrence of serious economic disturbance, competent malariologists believe a well directed program sustained over a period of not more than 10 years should achieve total eradication.

Altogether too little attention has been given by health officers to the changing pattern of disease incidence and to the possibilities for mass application of the newer diagnostic and therapeutic procedures. As a matter of fact, the whole group of acute communicable diseases toward which so much public health effort is directed accounts for less than 3 per cent of general mortality. While these diseases are important causes of morbidity among young children, they occupy a minor rôle as causes of industrial absenteeism. Furthermore, any review of the causes of general morbidity, physical impairment, or gross mortality clearly shows that the greatest advances in public health are to be made in the area of non-communicable illness. Many obstacles involving change in social attitudes, improvements in methods of finance, and relocation of both professional personnel and physical facilities must be recognized and surmounted before substantial progress can be expected.

Traditionally in this country, a man's illnesses have been regarded as his personal affair—something he may endure if he prefers, or from which he may obtain relief if he is both willing and financially able to do so. Gradually, as society has increased its investment in the training and security of the individual, this point of view has become a subject of serious debate. There are signs which clearly suggest that a complete reversal of attitude is in the offing. With such a shift in viewpoint, the means for implementing an enlarged program of medical care assume added importance.

Illness, by its very nature, is not adapted to individual financing. It is an experience not desired; hence most people do not have the incentive to provide for its consequences. Neither its occurrence nor its severity can be predicted for any one person. On the other hand, the illness experience for the nation as a whole, or for significant groups can be foretold with exactness. The costs, when apportioned, are not excessive for any but those in the very-low-income and dependency brackets.

Time will not permit, nor is this the occasion for discussing the relative merits of different schemes for distributing medical risks. Suffice it to say, however, that public health agencies—which presumably represent the consuming public and which are dedicated to raising the general level of health—cannot without losing their proper status refuse much longer to explore methods for extending medical service to all groups of the population. By this is not meant a mere academic or dilettante type of interest, but one that manifests itself in a desire for participation in actual organization and management of operating programs. Let us hope that the action this year of the Program Committee in devoting one general session to health insurance has set a precedent, and that future meetings of this Association may serve as forums for the discussion of proposed plans and accumulated experience in the general field of organized medical care.

Merely providing funds to pay for service, however, will not assure the delivery of medical care. This may be demonstrated today in almost any section of the country and particularly in the boom towns. People have the money to pay for medical care, but there are too few physicians, dentists, and nurses to provide the service.

Especially during recent years, physicians have tended to congregate in centers of population and wealth. Good roads and improved transportation facilities compensate only in part for reduction in the numbers of rural physicians. Expressed quantitatively, the problem is as follows: In states where less than 30 per cent of the population is concentrated in urban areas, there are available for service only 77 physicians per 100,000 persons; while in states where 70 per cent or more of the total population is classified as urban, there are 163 physicians for the same number of inhabitants. Influence of the economic factor upon availability of physicians is demonstrated by the presence of 147 physicians per 100,000 population in states where the per capita income exceeds $600 as contrasted with 69 in those where the corresponding index of means is under $300. In order to bring about an equitable distribution of physicians in relation to population, means must be devised for attracting to underprivileged areas not fewer than 25,000 physicians.

Among the disadvantages of rural areas that discourage the location of physicians is the inadequacy of hospitals and related facilities essential to the practice of modern medicine. For the nation as a whole there is a shortage of 166,000 general hospital beds. About 53,000 of these can be supplied through additions to existing institutions, but the remainder must be distributed among new hospitals, most of which should be located in areas away from the larger centers of population.

Fewer than one-third as many additional hospital beds are needed for tuberculous patients as for those with general illness. More than 50 per cent of the total number of new tuberculosis beds recommended are to meet deficits in the South. As in the case of general and tuberculosis hospital facilities, the southern states also have

extreme shortages in hospital beds for mental patients.

Provision of the required number of hospital beds of various medical types would involve construction costs of at least $2,000,000,000. A building program of such proportions obviously cannot be undertaken in its entirety at any one time. Careful planning is called for if first needs are to be met first.

Now is the time to proceed with such details as site selection, fiscal arrangements, and the preparation of functional drawings for physical facilities of all types that serve the needs of sanitation and medical care. Without these, delay and confusion will follow later. Unless health departments bestir themselves in these respects, the greatest needs—especially in smaller cities and rural areas—may go unsatisfied even though there be a post-war construction program of large proportions.

With some variations among individuals, the problem of dental caries is practically universal. Yet all surveys emphasize the fact that only a minor fraction of the population receives anything approaching complete dental service. Two obstacles stand in the way of extension of dental service—inadequate numbers of dental personnel and prohibitive costs of care. Under the prevailing scheme of dental practice, from three to four times the present number of dentists would be required for complete dental service. Increased use of auxiliary dental personnel, working under the direction of dentists, would reduce considerably the number of dentists otherwise required and at the same time lessen the cost of care. By concentrating attention on the school age group and repairing carious surfaces as they develop, the consequences of neglect, namely tooth destruction, would be postponed at least to that time in life when the individual would be in a position to assume a larger measure of responsibility for his own welfare. Despite the lowering of costs which could be achieved by procedures such as those suggested, many careful observers doubt that the problem of dental care can be solved without the development and widespread application of preventive measures which will materially reduce the incidence of caries.

After all the foregoing suggestions for preventing the occurrence of illness and increasing the availability of care have been put into operation, there will still remain even greater possibilities for advancing public health by means of research. Such research should be designed to elicit new and more effective preventive measures, to improve diagnostic and therapeutic procedures, and to lessen the costs thereof. Of course, the needs for and the possibilities in research are infinite, and no one can predict the applicability of any discovery regardless of how irrelevant it may appear at the time. From the standpoint of public health, probably the greatest needs for research are in the fields of mental disorders, acute upper respiratory infections, dental caries, and malnutrition.

Among the disease categories mentioned, mental disorders are outstanding. On any given day the number of persons in mental hospitals alone exceeds the number in general hospitals. Emotional maladjustments and mental aberrations of other types are present on all sides. Notwithstanding the extent of the problem, nowhere in the United States is there in operation a substantial, well conceived, and adequately financed program of basic research. The institutional care of the mentally afflicted is, and for a long time has been, the exclusive monopoly of public agencies; yet little has been revealed to reduce the problem or improve therapeutic procedures. This neglect constitutes a serious indictment of public medical service. Certainly

there is no basis for believing that mental abnormalities are inscrutable if approached through modern methods of research. Those disorders directly attributable to dietary deficiencies readily respond to improvement in nutrition. The malaria treatment of paresis is an example of what may be accomplished with the psychoses of infectious origin. Insulin and other forms of shock therapy indicate quite clearly that the deteriorative processes of schizophrenia and the melancholias can be stabilized and in some instances reversed. Because of its facilities for research and its responsibilities for the care of mental cases, perhaps the federal government should assume more aggressive leadership in this field. It has been suggested that the general pattern established by the National Cancer Institute be followed in projecting a program of research in the field of mental disorders.

In this country at least, man is fairly well protected against those infections he may acquire through ingestion, but no corresponding gains have been made against respiratory infections. Today the latter problem may be no more difficult than the former was some fifty years ago when the work started. With the extension of air conditioning, sterilization of the air we breathe—at least the indoor air which is most heavily laden with infectious material—may not be altogether visionary. A more satisfactory and universally applicable procedure would be some method of increasing human resistance to infection. Better therapeutic agents than those now available should lessen the amount of disability attributable, for example, to the common cold.

The third broad subject for inquiry considered as a prerequisite to improved public health is dental caries. Here is a field wide open for almost every type of investigation. The very few research workers who have explored it are not in agreement as to whether caries results from a single or from many causes; whether the underlying factor is bacterial, chemical, or nutritional; or whether the condition represents some process in no way akin to any of these. As in the case of mental disorders, very little fundamental research is being done, and no program commensurate with the problem seems to be contemplated.

Fortunately, in the instance of dental caries, reliance need not be placed exclusively on the revelation of new facts which may disclose the intimate nature of the degenerative process. There are many possibilities in reparative dentistry that remain to be developed and exploited. Among these may be mentioned new synthetic fillings which would simplify the mechanical job involved and reduce the cost.

Basic research is needed to reveal the ultimate secrets of metabolism in order that efforts to influence body processes by food intake may be definitive. Of more immediate and practical importance are clinical and administrative studies designed to determine the rôle of health agencies in nutritional programs. So far agricultural agencies have carried the major share of the burden with little or no guidance from the medical and allied professions. This situation must be remedied if current information is to be applied understandingly.

SUMMARY

The present concern of all persons interested in public health should be: (1) to hold the gains already made in raising the general health level of the country; (2) to increase these gains by extending the traditional health services now in operation to all segments of the population; (3) to broaden the definition of public health service to include essential elements of general

medical care; and (4) to exploit the possibilities in research.

Several broad avenues of approach might be followed in translating this concern into action. National coverage by full-time health organization may be secured through reorganizing and combining existing health departments and establishing new units in areas where none now exist. Differences in opportunity for receipt of medical care can be corrected by removing economic barriers and by redistributing professional personnel and hospital facilities. Finally, public health should be significantly advanced by concentrating research activities upon the prevention and cure of mental disorders, acute respiratory infections, and dental caries —diseases and disorders that contribute most to morbidity—and by improving our understanding of nutrition.

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The Evolving Pattern of Tomorrow's Health

II. The Post-War City*

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THE usefulness and the importance of any profession in the social order rests upon the fidelity with which it holds fast to the sound and basic principles developed in the past and the vision with which it adapts those principles to the evolving challenges of the future. The American Public Health Association has an honorable record of more than sixty years of service; and at the end of this period we find a million lives a year being saved upon this continent through the control of tuberculosis, typhoid fever, and other communicable diseases and by the reduction of infant mortality. These results have been accomplished by the twofold approaches which together constitute the science of public health—the control of the environment of man by sanitary science and the upbuilding of the vital forces of man by preventive medicine.

The extent of our future usefulness depends on the degree in which we can apply these well tried principles to the tasks of tomorrow. Those tasks will no longer be concerned only with the negative problem of defense against specific killing diseases, but also with the problem of upbuilding health and vigor and efficiency and the joy of living in a positive and creative sense. If we shrink from this challenge, public health will crystallize as a necessary but minor cog in the routine machinery of government. If we accept it, our leadership may be as outstanding in the next half-century as it has been in the last.

In a positive view of public health in the post-war period, the home and that aggregation of homes which we call a city must be of central interest. The home is the physical basis of the health of the individual. The city is the ecological background on which the physical and emotional and social soundness of a community depends.

The architect, with whom we must work in this field of the future, has not been slow to realize the intimacy of our relationship. Vitruvius in the first century, A.D., said, "The architect must know the art of medicine in its relation to the regions of the earth." Eliel Saarinen in his book on *The City, Its Growth, Its Decay, Its Future*, published this year, says, "It must be borne in mind that the family and its home are the cornerstones of society, and that man's physical and mental development depend largely upon the character of the environment in which

* Presented at a Special Session of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

he is nurtured as a child, where he spends his manhood, and where he does his work."

It is on account of this intimate relation between the city and the health of its inhabitants that the Committee on the Hygiene of Housing was established by our Association six years ago. This committee has made substantial progress; but it has only just begun its task. We have prepared an outline of the Basic Principles of Healthful Housing which has been cordially accepted by experts in housing as the basis of their plans. We have ready for publication a series of inspection forms and appraisal procedures by which the degree of substandardness of individual dwellings, and of neighborhoods and areas can be determined with a high degree of quantitative accuracy. This procedure offers to the health officer an invaluable instrument for the exercise of his legal power of condemnation and his orders for the improvement of property. It should provide a sound basis for routine sanitary inspection, which in the past has not been one of the most efficient activities of the health department. It will be an inestimable aid in the programming of new housing developments and urban rehabilitation and in the wider reaches of city planning. The committee is now in position to render to health officers (at cost) the same sort of service in this field which the Committee on Administrative Practice has long provided in the general area of health department administrative procedure.

We are at present at work (with the aid of experts in administrative law) on a study of the legal bases of housing control, with special reference to the use of those delegated health department regulatory powers which have been employed with such notable success by Huntington Williams in Baltimore; and we have organized a special group of expert subcommittees to translate our Basic Principles of Healthful Housing into specific standards to govern post-war home construction.

In all its activities, the Committee on the Hygiene of Housing has recognized that the individual home can only be improved and protected by considering it in relation to it environment. The contributions made by our federal and local Housing Authorities have had their chief significance in the fact that these authorities have created not only sound structures but sound neighborhoods; and our concept of the environment of the healthy individual as extending beyond the four walls of his dwelling must be projected to the city as a whole.

Our cities today are sick; they suffer from the chronic and progressive slum disease. It is no mere figure of speech when we talk of "blighted areas." "Blight" in a city is like blight in a plant or cancer in the human body. It spreads from its center year by year as Howard Green's maps of Cleveland show so clearly. Our cities are decaying at the core; and, in a vicious circle, the taxable values which are needed for rehabilitation are escaping to governmental areas outside the municipal limits. The situation is serious; and the treatment must be radical.

The essential needs which must be met in planning for a healthful city are many. We may enumerate some of the most significant of them:

1. A location for the city in a region where climatic conditions are favorable. No civilization can develop greatness where the climate is too far from a desirable mean.

2. Access to primary sources of food supply. The students of geo-politics are right in their emphasis on the relation of the heartlands and the coastlands; and the strength of the United States is largely due to the fact that it—alone of all the great continental

powers—controls both types of area under a single flag.

3. Adequate and safe water supply. The presence of a spring or well was generally the determining factor in the choice of the site on which a village grew into a city (Blackstone's spring on Beacon Hill in Boston).

4. Sanitation, including particularly protection against vermin which play a rôle in the spread of epidemic disease. The first settlement at Jamestown, Va., had to be abandoned on account of malaria.

5. Protection against enemies. The hill cities of Italy and of early New England were placed on the heights for protection against both malaria and human foes. If we do not combine on a world-wide basis to chain the dogs of war, the hazard of the bomber will be a determining factor in city planning. The dangers of automobile traffic must certainly be an essential factor in such planning.

6. Illumination. The practice of street lighting (first it is said, introduced at Antioch) has been an essential factor in making the growth of the modern city possible.

7. Housing. Most vital of all the elements in a modern city is its housing. To quote again from Saarinen, "The primary purpose of the city is to provide adequate living and working accommodations for its population."

8. Transportation. Convenient circulation between various points in the city and easy access to neighboring communities is obviously essential to sound municipal development. Waterways determined the site of most of our cities. The railroad and the automobile have dictated the lines of their recent evolution. The airplane will profoundly modify their future.

9. Means of livelihood. The health of the city must basically depend on the factories and the fields from which its residents and the environment to which it furnishes trading facilities procure their livelihood. Many of the new industrial communities developed in the present war emergency will form the centers of new permanent civic areas.

10. Recreation. In the future economy of plenty to which we look forward, it will be increasingly clear that man works to live and does not merely live to work. The shortening of the hours of labor and the years of labor will make leisure time activities of increasing significance as the world of the future is evolved.

11. Facilities for trading. It is too often forgotten that the commercial district of a city is quite as important an element in its prosperity as its industrial development. In cities serving adjacent rural areas, the factor of commerce may be more important than that of industry.

12. Social intercourse. The country store and the market place have served an essential rôle as centers of neighborhood and civic interest. This will be a function of primary interest in planning the city of the future.

13. The school. The little red school house—in its more modern and effective forms—must always be an essential element in healthy community life.

14. The church. The white steeple among the elm trees is the most characteristic symbol of the New England village. The element of community worship meets fundamental human needs which can never be outmoded.

The relative emphasis on these various fundamental needs of community living will vary with the progress of mankind. The half-timbered houses of the medieval town clustered about the cathedral on the hilltop. The baroque city spread itself along broad avenues radiating from the palace of the King. The industrial metropolis of today huddles about the factory. I have sometimes dreamed that the central feature

of the city of the future will be its churches and schools, its playgrounds and its recreation centers, with the fulness of realization of the human personality as its keynote, rather than the dominance of bishop or king or production manager.

Whatever the dominant motif of the city of tomorrow must be, it is clear that such a city must be developed as a whole, with unity, with purpose, as a total expression of the spiritual ideals of its people. The cathedral city and the palace city had a measure of such unity; and they were beautiful places to see, satisfying places in which to live. The industrial city of today has no such unity and no such significance. It is not a healthy biological development but a diseased product of fortuitous and unregulated economic forces. If our civilization is to be worth saving, its cities—and much of its countryside as well—must be rebuilt more nearly according to our heart's desire.

We come then to planning—the deliberate and purposeful and intelligent application of the human mind and the human will—as the only possible solution of our problem. We must plan the homes of the future in the setting of neighborhoods, neighborhoods in the setting of cities, cities in the setting of regional areas, of nations and of the world economy.

For each area we need a master plan drawn up in consideration of the probable population of that area, its industrial and commercial and agricultural future (in the light of its relation to the outside world); a physical plan which will provide for the roads and streets and utilities, for industrial and commercial centers, for recreation areas and for homes; a social and economic plan which must form the basis for physical development; with appropriate legal and fiscal policies for the execution of the program.

The time for such planning is today; and the difficulties and complexities of the problem need not deter a people like ours with three centuries of pioneering tradition in our blood. That the end sought is not an academic dream may be indicated by a recent contribution—on one phase of the problem—by the U. S. Chamber of Commerce under the title "Plan Now for Future Public works." This document points out that—

"In New England, the exercise of foresight would be termed 'Yankee shrewdness,' in the mountains of the South it would be 'gumption,' in the West 'horse sense.' Wherever found and whenever used, it is merely the application of good common sense in our affairs, personal and public, local and national.

"We all remember vividly the great depression which followed the roaring twenties. Men out of work, apples sold on the streets, bread lines, relief headquarters with interminable lines of applicants, poverty and destitution. It was not a pretty picture. We do not want to see it occur again.

"Good common sense should tell us that if we intend to avoid a repetition of this ugly picture, now is none too soon to do the real hard spade-work necessary for its avoidance. That means 'Postwar Planning.'"

We are all, probably, in favor of planning in some form or other; but when it comes to the question who is to do the planning, harmony dissolves into discord. Big business is all for planning, by big business—but not by government. Republicans are all for planning, by Republicans—but not by Democrats. Governors are all for planing, by the state—but not by the federal government. President Wriston of Brown University says in the August *Harper's* that "Government by bureaucracy, control of business by administrative regulation, manipulation of the economy for political purposes—

these are stark reaction." Representative Sumners of Texas, in the September *Reader's Digest* thinks we are on the road to Hitler totalitarianism, and his remedy is to "send all these non-federal functions back where they belong to the states and the local communities." Yet it is clearly impossible for business to plan with intelligence except in relation to governmental plans, or to prepare local and state programs except within the framework of a national plan, or to make any plan at all without "administrative regulations" and "manipulation of the economy for political purposes"—if we assume that the word "political" is used in its true meaning as "pertaining to polity, or politics, or the conduct of government . . . relating to the management of the affairs of state."

One of the most unfortunate examples of extreme opposition to the intelligent exercise of foresight was the action of our last Congress with regard to the report of the National Resources Planning Board. This report is recognized by all competent critics as a technically sound and philosophically illuminating document—far more significant for the United States than was the Beveridge Report for Great Britain. Yet the Beveridge report was an the counters of all the New York bookstores last December, while the National Resources Planning Board report has been —for the time being—smothered and ignored. Congress not only abolished the Planning Board, as a part of its private war against the administrative branch of the government, but provided specifically that no other agency of that government should continue any of the work of the Planning Board and that the records of the board should be kept in the archives and not made available to any other government agency.

The argument against planning by governmental agencies—the only agencies which can possibly plan in the common interest of all of us—always follows the same general line. It relies on an emotional appeal against "bureaucracy" and an invocation of the sacred rights of the individual, which are supposed to be threatened by collective action. It ultimately stems from the doctrine of laissez-faire the mystical creed that if you let everything alone and everyone does as he pleases, some hidden god-in-the-machine will make everything come out well.

Yet it should be abundantly clear that there is no fundamental opposition between individual action and group action, that individualism is not always desirable and collectivism always undesirable. Our objective in a democratic society must, of course, always be the integrity and the welfare of the individual. It is equally certain that the welfare of the individual can often only be attained by collective action. In the field of housing and city planning, for example, it is clear that unregulated individual initiative has created our inflated urban land values, our ghastly slums and our decaying cities. The only possible way out is far-sighted and intelligent planning—not of boulevards and civic centers, primarily—but of communities, in which the individual can live and work and play and develop the fullness of his personality. The same need for planning is obvious in the social and ecenomic spheres, where the individual needs the strength gained by collective action in order to attain the opportunity to work productively, to secure the medical care which has never been adequately provided for low income levels in the United States, to obtain a reasonable degree of protection against the unpredictable hazards of illness and old age—all of which desiderata are essential to the realization of that "dignity of the individual" of which we have talked so eloquently.

The problems involved are complex

ones. They must be decided by the people for themselves; but that decision must be made with the aid of expert advice. I suspect the most individualistic pioneer when he sought a path through the forest did not ignore the evidence of a trail made by some predecessor. Such a trail is a "plan" and the planner is essentially a trained and experienced trail-maker. This is why the indiscriminate abuse of "bureaucrats" is a particularly unfortunate manifestation of the effort to arouse irrational passions. Who are the "bureaucrats" of the United States? They are the hired men you and I employ to do some joint jobs for us. Is the postman who delivers your letters a "bureaucrat"? Is the traffic officer on the corner a "bureaucrat"? The chemist in the Department of Agriculture improving fertilizers; the physician in the U. S. Public Health Service controlling epidemic disease; the actuary administering the Social Security legislation passed by our Congress; even the harassed men and women engaged in the enforcement of essential wartime legislation; are these all "bureaucrats" because they happen to be hired by us to work for us, not by a private corporation to work for it?

The health officer is one of those dangerous "bureaucrats" who is striving with unselfish devotion for the common good; and one of the urgent demands upon him in the future years will be for participation in the salvation and the upbuilding of the cities of this American continent. This is a task in which he must share—for the basic ideals involved in city planning are health ideals, if we think of health in its broader sense. It was not a planner or an architect who has given us our most vivid word-picture of the essential significance of the civic ideal. It was a great health officer, Sir George Newman, who said:

"What a strange and mysterious thing is a city! It is both a dream and a reality, a past and a present, the houses, workshops, and shrines of a commonwealth. It is the hearthstone of the people from which they measure the world. It is their dwelling place, the cradle of the living and the sepulcher of the dead, a home in the minds of men where their glory remains; an unseen army coming in through the Eastern portals of birth, an unseen army passing forth through the Horn Gate and Golden Gate and the gates of the West. It is the embodiment of the arts and crafts of man, the mart and market place of his merchandise, his rear guard from the enemy and his hiding place from the tempest, the beginning and end of the work of his hands. For men make cities, and cities make men; 'the walls of our cities are men.'"

The Evolving Pattern of Tomorrow's Health

III. The Health Department of the Future*

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THE preservation of public health has long been recognized as the first obligation of government. In the absence of health, man cannot survive.

Shed of the garb of superstition steeped in the fear and emotionalism of the miasmatic and epidemic constitution era, public health practice must now stand on its ability to provide people with the privileges of a long and healthful life which today's science and community health service can now provide. The dread of catastrophe with the approach of some devastating plague of unknown cause compelled people to place faith and authority in committees and boards of health. The healthmen have performed in noteworthy fashion in controlling epidemic disease and in sanitating man's environment. The pandemics of yesteryears are largely gone. The maintenance of communicable disease control services and supervision of water, milk, food, and excreta disposal can keep epidemics at a respectable distance. The modern health department must do more than reminisce on the visitation of smallpox, yellow fever, cholera, and the plague. It must contribute to the fulness and wholesomeness of a protected life.

The health department of the future must concern itself with the broader interests of the masses. Education has dissipated the mysticism of medical practice concealed in a terminology of the classics. It has brought forth the realization that the eternal fight for good health is a people's struggle against ignorance, superstition, and poverty. The newer knowledge of the causes and modes of transmission of disease have dispelled the urge for the philosophic conjuration of the appointed few, and autocratic direction of the official healthman. Now the mother in the slums understands more fully than her sister on the broad boulevard the value of a safe milk and a sanitary food supply as a protection against the enteric diseases. The advantages of good medical care, of hospitals, diagnostic, x-ray, laboratory, and other technical services are now understood, and the urge to have them at the time of need is becoming universal. People are no longer satisfied with a barrier against the occasional epidemic; they seek the daily satisfactions of a vigorous and buoyant health. It is the healthman who has created these demands and appreciations. It is he who must see that the needs of the future are met on broad community bases.

Total health planning for the people of any area necessitates a complete knowledge of all groups and factors which contribute to better care both in health and sickness. Does the health officer consider community facilities in

* Presented at a Special Session of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

relation to his population, area, transportation, special needs, and the economic capacity of his people? Is the number of practising physicians, dentists, and nurses adequate to meet local need? What of the general hospitals, their character, standards of practice, availability of beds, costs of service? In what manner are adequate facilities and services provided for the indigent and part-pay patients? The benefits of good bedside nursing service have been broadcast without limit. Is such service now available to all who need it irrespective of their ability to meet the cost with family funds? And what of the clinical and public health laboratories? Are they licensed or controlled with a view of assuring good quality of service? Are blood counts, urine analyses, basal metabolisms, x-ray examinations within the price range of the many or available only to the few? Are the services of the competent pathologist and roentgenologist provided for expert and understanding interpretation of results? How long does it take to secure the examination of a sample of water or milk? Is blood plasma making its contribution to civilian defense? Does the community possess its own blood plasma reserves, in hospitals or state-wide pools, from which local physicians may obtain free plasma for treatment of patients in their charge? What types of medical and dental services for indigent and low-income groups are available in the health area? How are drugs, appliances, glasses, dentures secured? These and many similar questions must be answered by the health officer before he can proceed to a definition of his problems, problems based upon mortality and morbidity statistics, and an analysis of available service records by area, racial and social groups.

In dealing with the communicable diseases including tuberculosis, syphilis, and gonorrhea, the public health administrator has not restricted his activities to statistics and health education. He has dealt with diagnostic facilities, consultation service, x-rays, laboratory service, tuberculin testing, blood examinations. He has been concerned with the adequacy of medical and nursing care, in sanatoria and hospitals, in clinics, and at home. Prompt and adequate care is essential to patient recovery, rehabilitation, and the control of infection. The health officer will extend his interests beyond the realm of the communicable diseases and plan community-wide programs to deal with other causes of disability—the problems of the adult, the aged, the industrially employed, accidents in the home, at work, and elsewhere. To what extent are those employed by tax supported agencies, by industry or commerce, or by other organized groups provided with hospital, surgical and medical care on an insurance basis? To what degree are industrial hygiene services available in the health area? What of plant sanitation, water supply, waste disposal, safety and wholesomeness of food served? What are the major industrial health problems and what is done about them? These and many similar questions must be answered by the health officer in evaluating the completeness of his community program.

The modern health department must assure to all the people the advantages of freedom from lingering illness and early death. We know a great deal about the character and manner of handling most diseases. We are wanting in the machinery with which to make medical, dental, nursing, and other public health services readily available to the masses. It does not follow that the health officer should of necessity administer all the functions and activities which we have enumerated. As a rule he will not. These services will not all be a part of the

health department fabric. The form of organization will vary with time and place. It is, however, essential that the health administrator become a leader in the planning and a coördinator in the fulfillment of such programs even though they be not under his direct administrative supervision. Should he fail to become a leader in a new health era of tomorrow, others less competent stand ready to act in his stead.

There has been much waste of personnel, time, and material, in the name of public health. In the days of inexact and partial knowledge of the causative factors of disease spread, there was some excuse for this waste. But even today many health departments emphasize the esthetic and the politic at the expense of the fundamental principles of health promotion. In the emotional and terrifying days of yellow fever, cholera, and other exotic diseases, the judgment of the health committee was seldom challenged. Any expenditure of public funds or any imposition on personal liberty seemed justified as a public health measure. Today with a more common understanding of disease control and prevention the board of health must give full and reasonable accounting for all of its costs and expenditures. To do otherwise means loss of public confidence and willingness to support the work of the health department. Appropriations would shrivel up and soon disappear if the people did not give understanding approval to the health program. We can find comfort and aid in our own *Evaluation Schedule* for local health services initiated by the Committee on Administrative Practice in 1921, repeatedly revised and adjusted during the past twenty years and kept attuned to the ever-changing concept of health needs, and now streamlined to meet the social, health, and welfare problems of the future. Together with the new *Evaluation Schedule* there is now being published a *Guide* to serve as an administrative handbook. There has also been published a booklet known as *Health Practice Indices*, consisting of a series of charts showing the range of unit practice for cities and counties which have submitted schedules for the past two years. It is believed that this pamphlet will serve a most useful reference purpose to health officers as it will depict practices in various parts of the country. These three publications constitute the measuring rods with which the health officer may study his own work and accomplishments in relation to the work of others and in terms of group judgment as expressed by the members of the Committee on Administrative Practice.

Our existing trained personnel of physicians, dentists, public health engineers, nurses, and others who have prepared for a professional career in our field of life conservation have not been effectively employed to secure complete and adequate coverage throughout the states. Until the release of the report of the Subcommittee on Local Health Units no master plan had been prepared for the extension of full-time local health service to all parts of the United States. This committee has shown that there are 41,052,600 persons in 1,687 counties in 41 states for whom no full-time health service has been provided, while in the remaining counties, cities, and districts there is frequently found duplication of effort by political units. It is now believed that 1,127 local units administered by a professionally trained and experienced health officer, preferably a physician with appropriate associated professional and technical personnel and equipment, can provide the quality and quantity of health service suggested in the *Evaluation Schedule* and its accompanying *Guide*. As a rule (and we admit an occasional exception to any man-made rule) population units of less

than 50,000 are not able to obtain and support well qualified personnel, and find it difficult to support a full-time local health unit. A balanced program demands an adequacy of trained personnel in addition to the medical officer of health. Minimum ratios have been suggested for public health nurses (one to each 5,000 population), public health engineers and environmental sanitarians (one to 25,000 population), clerical personnel (one to 15,000 population). The committee has under consideration the need for health educators, statisticians, and laboratorians.

The committee's proposals do not, however, end here. They include economic and professional service factors. It is stated that:

> . . . in developing district outlines an endeavor should be made so to group counties or parts of counties as to reduce large inequalities in per capita income by combining urban and rural, high and low income groups in a single jurisdiction where otherwise desirable. Also, in combining counties or parts of counties within one district an attempt should be made to group them so that the ratio of physicians will not be less than 1 to 1,500 of the population, and that the general hospital beds available for the community be not less than 3 per 1,000 of the population.

All these recommendations suggest new responsibilities for the public health administrator. Neither self imposed isolation in the seclusion and comfort of a city hall chair nor complacent meditation on the occasional epidemic and abatement of nuisances offensive to the olfactory nerve will produce the type of community-wide understanding and coöperation so essential to the fulfillment of the health program. The health officer must become a leader among the professional and lay interests of his city, county, or district. He must elevate his office and influence from the era of the garbage dump and pesthouse to leadership in education and in the social, health, and welfare services. Health education is the foundation upon which all public health practices survive. And there is no need of giving the public the newer knowledge essential to health promotion unless we provide the facilities to make the services universally available. There is no need to excite people about the ravages of syphilis or the devastating influence of tuberculosis unless we prepare and establish the facilities through which the individual may receive the benefits which are his due. Why sing the praises of penicillin, the sulfa drugs, or blood plasma if these are not within the financial reach of the individual? Every new health promoting and lifesaving activity should be available to all alike, as rapidly as such developments are scientifically approved and commercially practical. To teach people what they should have for sickness and health, be it food or medicine, and then fail administratively to make accomplishment possible results in frustration, disappointment, and social unrest.

For the public health of the future we need democratic planning and participation rather than autocratic dictation by government or vested interests or fortified minorities. The newer knowledge of the medical sciences is making available a great host of lifesaving drugs, sera, preventive and protective treatments. The discovery and use of many of these substances has been stimulated by the war. New problems in distant lands, the want of therapeutic preparations of prewar days have prompted the development of new and substitute means of handling disease and promoting health. Their value will be well known to the returning members of the armed forces. Demand for their use will be universal. Programs for community health service must include all these implements for warfare against disease. It means better health departments, better medical and dental services, hospitalization

when indicated, the means of early diagnosis, laboratories, x-ray services—all within the means of every one of us. The health officer of yesterday must unshackle himself from the dogmas and heritage of his predecessor and become a leader of the new public health of tomorrow.

Maternal Mortality in New York State: 1933-1942

. . . Ten years ago the New York Academy of Medicine published the findings of its Committee on Public Health Relations based on a study of more than two thousand deaths from diseases and conditions associated with childbirth.* In introducing this courageous report, the Committee observed that "the spectacular progress of the last years in the reductions of many death rates has not been paralleled by any drop in the rate of death from puerperal causes." Its unequivocal conclusion was that as a conservative estimate almost two-thirds of the deaths were preventable, "that number of women, if they had had proper treatment and care, could and should have been brought safely through parturition." The responsibility was divided by the Committee in an almost 2 to 1 ratio between the attending physicians and patients: the physicians were charged in equal numbers with error of judgment or error in technique; the patients, with failure to obtain suitable care (59 per cent), or lack of co-operation (41 per cent).

The disclosures made by this distinguished body of specialists, their concrete recommendations, the probing activities by other medical groups throughout the State, which brought about radical changes in obstetrical practice and hospital procedures, and the coincident developments in chemotherapy have produced astonishing results. Now the sentence quoted above may be justly inverted: "the spectacular progress of the last years in the reduction of the death rate from puerperal causes has not been paralleled by the drop in the rates of death from most of the other important causes." The Committee considered that it should have been possible to prevent 65.8 per cent of the maternal deaths. In 1933 the New York State rate was 63 per 10,000 live and still births; in 1942 the rate was 22, a reduction of 65.1 per cent! This almost perfect correspondence between scientific hypothesis and actuality, while striking, would be unimportant did not the present favorable condition represent a stage in an uninterrupted downward trend.—From *Health News* (New York State Dept. of Health), 20, 42 (Oct. 18), 1943.

* *Maternal Mortality in New York City.* The Commonwealth Fund. New York, 1933.

The Evolving Pattern of Tomorrow's Health

IV. The Health Worker of the Future*

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THE other day a well known commentator on current affairs who was predicting the pattern of post-war America went out of his way to assure his readers that the quality and quantity of public health services were sure to be expanded and increased. Such an idea probably never occurred to the commentators who were forecasting the brave new world a generation ago, and indeed the fact that anyone may so predict with confidence now throws light on what has happened in the last quarter century. Commentators may now have before them forecasts like Dr. Vaughan's of the health department of the future around which to imagine the reality of community health.

The health worker who was preparing himself for career service in public health 25 years ago had a difficult task because, for one thing, the classes of public health workers were not sharply defined, their titles and functions had not become at all uniform, and there was slight tendency through the development of merit systems and other devices to bring these functions down to a common level in the various parts of the country. In short, the progress toward making public health a profession had just begun, and it has been allowed to grow since without much conscious planning.

To those who have grown up into careers in public health during this quarter century these facts are familiar, yet it probably is well for us to remind ourselves of such significant changes as we try to look ahead to the post-war period and to forecast something of the character of the health worker of the future and his place in the community. We shall assume that his undergraduate training will continue to improve; we shall concern ourselves with graduate levels of training and experience.

This effort to sketch a composite picture was suggested by the Program Committee in planning the 72nd Annual Meeting, and William P. Shepard, M.D., Chairman of the Committee on Professional Education, was chosen as the person best able to look ahead. Dr. Shepard's inability himself to be present need not prevent his contribution to the thought and planning which are here reflected, for it is in this field that his committee has been laying a foundation. The work of the Committee on Professional Education now represents 13 years of consistent study and planning on the part of a specially selected group who have sought to make a true forecast of the health worker that

* Presented at a Special Session of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

is to be. This committee was organized under the Chairmanship of W. S. Leathers, M.D., who, four years ago, was succeeded by Dr. Shepard.

We may today think of at least 22 specialties comprehended within the framework of public health. Besides the better recognized classes, such as health officers, public health engineers, sanitarians, public health nurses, laboratory directors, vital statisticians, industrial hygienists, nutrition workers, maternal and child health workers, epidemiologists, and school health men, one may list the public health dentist, the food chemist, the serologist, the pathologist, the bacteriologist, the medical specialist in tuberculosis, syphilis and gonorrhea, the medical administrator, the executive of voluntary health agencies, and perhaps a dozen other specialties which have grown up during the rapid development of professional work.

You have heard Dr. Vaughan say that the modern health department must do more than reminisce on the visitation of smallpox, yellow fever, cholera, and the plague. It must contribute to the fullness and wholesomeness of a protected life. Fortunately Dr. Vaughan is a member of the Committee on Professional Education, through which the Association is helping to prepare the human material upon which his plans for better health departments must directly depend. It is appropriate therefore for this forecast to be read in connection with Dr. Vaughan's brilliant paper on the task which the health worker will have to perform.

QUALITIES OF THE PERSON HIMSELF

This forecast assumes that the person himself will possess qualities which enable him to be above the average in capacities which we all recognize as useful to career men and women. I am impressed that knowledge of public administration and of public law will give any health worker an advantage as he builds a career. There are, of course, other universally recognized subjects of importance. Especially will he do well to possess information about good personnel administration, whether he be employer or employee. We can expect the significant advances here of which business has already availed itself to be used in public service as well. The career healthman needs the fundamental information usually comprehended in systematic courses, but he also needs training and experience in the use of these tools in real life so that, in Browning's phrase, he will "watch the master work . . . and catch hints of the proper craft, tricks of the tool's true play."

What an advantage any person has who possesses public speaking ability, with poise before an audience and the ability to use his voice effectively. Similar ability in writing will represent perhaps an even more important resource for the health worker of the future than today. These skills may be acquired like others. It is encouraging to see the recognition of these values among the schools of public health. One school has set itself to make a recording of the voice and the public address of each student as a base line from which improvement may be expected. Another proposes to make good attainment in English composition a requirement. All of this will tend to make the healthman a more outgoing person, better able to transmit to others the knowledge and the attitudes which he possesses, and more persuasive in his approach. He must be more articulate. Is it not regrettable that our professional courses today tend to squeeze out of the trainee all the extroversion that he may have possessed? It results in the present difficulty to find even a few good public spokesmen among professional persons for radio programs of national scope. Yet I be-

lieve that the native endowment of public health workers in such ability is probably equal to that of those going into law or the ministry. The value of these accomplishments needs to be recognized and encouraged in our formal curricula so that the candidate will be both well informed and a real person. And we must encourage better performance, preferably by good example.

The inquisitive mind is another possession which we should like our public health worker of the future to possess, and we hope that he will carry on with such an attitude after his formal courses and into his daily life. Postgraduate training, in-service training, and refresher courses will mean much more to him and to those he serves if such a youthful freshness of viewpoint can be maintained and encouraged by the framework which we create for his employment.

IMPORTANT FOUNDATION STONES FOR A CAREER

Among several subjects which the worker of the future should understand I would like to emphasize a familiarity with social welfare and the economics of health. He should be conversant with the problems of public medical care and will probably more nearly accept than his colleagues of today the philosophy which the Association has declared in its official memorandum on "Desirable Minimum Functions and Organization Principles for Health Activities."[1] The teaching institutions must lead the way and prepare the student to expect a better pattern than that of the status quo.

It seems likely that the formal curricula for those preparing for life service in our field should be planned and operated by the universities, and that governmental supervision should not be expected to reduce these to a single denominator. We shall not soon be ready for rigid uniformity in this respect, yet there is a need already apparent for certain standards in the training of students, and the memorandum recently published by the Committee on Professional Education represents a declaration which forecasts some desirable minima which may by reference be included here.[2] The time *is* here, however, when the trainee has a right to know whether the school which he selects meets reasonable standards in its equipment and personnel. It is my belief that a listing of acceptable courses in public health is a need which now should be met and that the proper agency to list courses, outside of those in public health nursing, is the A.P.H.A.

There will follow a need for recognition of the attainment of the worker himself. There may be need for some certification beyond that afforded by Fellowship in the American Public Health Association and by the specialty diplomas now in use. It is my opinion, however, that the solution does not lie in an extension into public health specialties of the specialty board system which has grown so rapidly during the last decade in medicine.

PATTERN OF PUBLIC EMPLOYMENT

What may the worker of the future expect that pattern of his public employment to be? I believe that he can expect an expanding demand for this service and a readiness on the part of the public to pay salaries more nearly equal to those of his peers in his own profession and that of teaching. Certainly he can expect further progress to be made toward public service as a public trust, the trend toward which is already discernible in some political units. The recent amendments to the Social Security Act in the United States have given a substantial momentum to these changes and, if they are wisely administered both nationally and locally, it seems possible by this means to do away with the spoils system as it still

involves some health departments. Let no one underestimate the difficulty of this achievement, yet the way has been shown in some outstanding agencies and the future does belong to those who succeed in making public health a career service with at least as much independence as public education now possesses. Of basic importance to this end is the attitude of the public health professions toward the merit system, and at this critical point the American Public Health Association proposes to help make merit systems better and to create among the public health professions a sound appreciation of their significance.

Public merit systems, operated as a part of modern personnel management, seem to be clearly in sight. The good effect of such progress can hardly be measured on the attractiveness of professional work under public auspices, for the climate can be changed for the better and public employment may well attract and challenge the best personalities of the oncoming generations. It will take time to remove the incubus of old fashioned civil service systems which have bogged down with accumulated routines not at all acceptable to well trained career persons. The concept of civil service as a room, with a heavily guarded entrance and a barricaded exit, and with nothing between, represents an outmoded pattern. With an up-to-date recruiting system, with good job classification, with modern, objective examination methods, with personal service ratings, in-service training, a good salary system, supervised promotion, and with workable methods of separation from the service, the health worker of the future can well expect to live in a climate where the best he has to give may be given under circumstances that encourage career service. The Association hopes that such an achievement may be reached through coöperative planning between its Committees on Administrative Practice and Professional Education. The latter committee now has a staff at work productively along these lines.

A PROGRESS REPORT

Such a statement of ideals for the future requires that we orient ourselves as to the progress already made toward these goals. The 13 years of the Committee on Professional Education have resulted in the formulation of eleven statements regularly adopted by the Association, covering the educational and experience qualifications of as many specialties. In addition, four reports are in various stages of completeness as they progress through a regularly established routine of the Committee on Professional Education. Within another year it is not too much to hope that the Association will have reports available covering the best present opinion on training and experience on practically all the specialties represented in public health. A well planned scheme of periodic revision will serve to keep these statements fresh and abreast of the best thought as the years pass. The present circulation of reprinted reports has now exceeded 16,000. Thus the high aims of the founders of the Committee on Professional Education approach fulfillment and the worker of the future will owe much to these formulations of the most reliable opinion available. They are not static formulations, neither are they laws, but their influence is extending daily, and already they have been reflected in the qualifications required in scores of state and local jurisdictions and, with the progress of the Merit System Unit, it will not be long until they will have a really profound effect on professional levels throughout the United States and its possessions.

There is no intent on the part of the Association to ignore the voluntary agency and its staff in these considera-

tions which, for good reason, are focused largely on the official agency. There will probably continue to be many such privately employed persons. We shall hope to have a much more adequate forecast of what voluntary health work of the future will be like when the report now in preparation by the National Health Council is published. Even now, however, the Committee on Professional Education has reports in process or approved which relate directly to these unofficial activities. After all, a specialist—shall we say in tuberculosis—needs a background much the same whether he shall serve this year in a public agency or next year with a private group.

In the early stages of the development of professional standards it is inevitable that there should be rather sweeping exceptions allowed on account of those who had attained more or less standing before the movement upward got under way. Just as in the standards for admission to medical practice there had to be a "grandfather clause" to take care of those who had enjoyed years of practice before the rules came into effect, so it has been necessary in public health specialties to make similar provisions. The day is coming, however, when the passing of time will make such exceptions needless, and the occasion for recognizing unprepared persons appointed for political or personal reasons will become rare. The net effect of this progress on career service in public health will be good and far reaching.

The stimulating experience which has come to universities and to hospital staffs through the exchange of visiting experts should now be arranged by staffs of health departments and of other agencies. Why should not a plan for the loan and exchange of valuable staff educators, for instance, between university departments of nursing and visiting nurse associations, be now within reach? A comprehensive plan for field training centers open to those who complete the academic courses is imperative. If these can be set up cooperatively between several universities and local health agencies they will have an even greater usefulness. Such cross-fertilization as in these exchanges and in coöperative field training can make the service of the health worker of the future a stimulating and delightful experience that can stand in contrast with deadly routine which so easily develops where imagination and freshness are lacking. This plan can readily be worked in with present plans for study leaves, and can push forward the average of staff understanding and performance without waiting for another generation to arrive.

RECOMMENDED ACTION

This attempt to sketch a composite picture of the health worker of the future assumes that the teamwork which at best now characterizes some official and some private agencies will be attained elsewhere. Patterns of action which reflect this teamwork between federal and state agencies and between official and nonofficial may be cited. The present method of lend-lease personnel by the U. S. Public Health Service, together with in-service courses, has done something to promote higher standards everywhere. The present coöperation between the federal and state official agencies and the Merit System Unit of the A.P.H.A. makes it possible soon to expect the day when good methods of personnel administration will be available in every state. There are hopeful signs that the person trained and experienced in one section of North America may be useful and available for other areas through common registers. The preparation by the professional society of standard reports on communicable disease control, on the examination of water and

sewage (in coöperation with other agencies), on dairy products, and on diagnostic procedures—are serving a useful purpose in raising levels of work and eliminating meaningless differences. Thus blind alleys in professional advancement can be obliterated and ability can be better recognized wherever it may appear.

We have said that the developments of the last quarter century have been important but largely unguided. What may we do now to make career positions more attractive and more productive after another 25 years? What can a professional society do to guide the developments of the future?

We certainly should encourage the systematic training of those persons who have proved themselves to have ability. I believe the future will approve an apprentice system of testing trainees before postgraduate courses.

We should create a desire among health workers as among the public for modern personnel management, including merit systems.

We must encourage the better students in our undergraduate levels to seek careers in public health.

We must set before the oncoming generation good examples of public service which in turn will make profound differences in the health of our grandchildren.

We must make the public aware that in this field we are in competition economically with careers that offer good money returns and that, in the long run, there is no sound economy in low salaries and all that they bring.

I believe that Dr. Shepard and his committee have laid a durable foundation for the professional worker of the future and that the pattern for 1968 can be discerned in what we have now at our best.

The post-war world is going to need public health more than ever before. We have a growing tradition here that can be of high value for North America and perhaps good enough and strong enough to share with the rest of the world.

At any rate we may be sure that careers in public health founded on public service as a motive will bring that prestige which we seek for the healthman of the future and that there is no other way. Then advancement and recognition will properly come to those who have given most liberally of themselves to others.

"Oh if we draw a circle premature,
Heedless of far gain,
Greedy for quick returns of profit, Sure
Bad is our bargain!"

Dr. Vaughan has said that the health worker of yesterday must unshackle himself from the dogmas and heritage of his predecessors and become a leader of the new public health of tomorrow. Somehow I have confidence that through the American Public Health Association we are accelerating this process.

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The final paper on The Evolving Pattern of Tomorrow's Health, by Felix Hurtado, M.D., will appear in an early issue of the JOURNAL.

Function of the Health Officer in the Control of Tuberculosis among Veterans*

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ON previous occasions, I have pointed out that the tuberculosis problem in the United States is on the way to solution, and although war conditions may cause a setback, this may be expected to be only temporary. There are, however, a number of difficulties which must be overcome before our tuberculosis problem is finally resolved. For example, there is still a heavy concentration of the disease among Negroes, Mexicans, and Indians. Less serious, but nevertheless troublesome, is the high incidence of tuberculosis in certain occupations. Today, I wish to call your attention to a third situation, namely, tuberculosis among the veterans of our armed forces. In our campaign to eradicate the disease, this constitutes a hurdle whose magnitude and insidiousness have not been sufficiently appreciated. I am sure that health officers will wish to know the facts and will be eager to deal with this difficulty, as well as with the other two which I have mentioned. Their help is particularly needed in creating a new setup for the veterans, now that we are involved in the greatest war in our history, with larger numbers of our own men and women in the armed forces than ever before.

Let us review the development of the tuberculosis problem among veterans and what has been done to meet it. During the first World War, knowledge and facilities for the diagnosis of tuberculosis were inadequate to screen out at induction many of the men who were suffering from the disease, particularly in the early stages before symptoms appeared. This fact resulted in the later discovery of many active cases in the Army; the hardships incidental to the training program and to war duties produced still more. After the war, care of these tuberculous veterans was entrusted to the newly organized Veterans' Bureau. Many hospitals and sanatoria were erected for their treatment, and this service became a major medical activity of the bureau, and of its successor, the Veterans' Administration. As early as 1923, there were 23,653 veterans with tuberculosis admitted for treatment in hospitals or other agencies supported by the bureau. At first, such care was limited to those whose tuberculosis was connected with their military service; but subsequently more generous provision was made, so that those whose disease was unrelated to their military service (non-service-connected disability) also became eligible for treatment. As a result, the number of admissions for tuberculosis has continued large. As recently as the fiscal year 1942, after almost a quarter

* Presented before the Health Officers Section of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 13, 1943.

century, the total hospital admissions for the year numbered 9,658. For the entire period since the last war, there have been over 300,000 admissions of tuberculous veterans to hospitals of the Veterans' Administration or to other government, state, or civil institutions. However, as we shall see later, these admissions do not correspond to that many different patients.

The government has been most generous in meeting its obligation to tuberculous veterans. There has been an extraordinary expansion in the physical facilities for treatment. No efforts or funds have been spared in erecting hospitals of the latest type with excellent equipment, and with as good medical personnel as could be obtained. In March, 1942, there were 5,217 beds in operation to meet current needs, including those of veterans of the present war. This figure includes beds for the tuberculous in veterans' psychiatric hospitals. The number of beds for these purposes has naturally declined, as tuberculous admissions have become fewer. In addition to having all the costs of their hospitalization and transportation to the hospital paid for by the government, tuberculous veterans also receive a disability payment. Those with service-connected disability resulting from active pulmonary tuberculosis receive from $70 to $100 per month, depending upon the degree of disability. Those with non-service-connected disability receive $40 per month, if totally and permanently disabled. However, those without dependents receive a much smaller payment during hospitalization—$20 in service-connected cases and $8 in non-service-connected cases. For men who are treated at home, there is available an additional payment of $50 per month to the wife or other person attending the patient. I should point out here that these financial arrangements have had the unfortunate effect of providing an incentive to many men to discontinue hospital treatment and to attempt a cure at home.

The standards of operation in veterans' hospitals are of a high order, as is indicated by the ample sums set aside for cost of treatment. Thus, in 1942, excluding overhead costs, the per diem cost of operation for the tuberculosis hospitals of the Veterans' Administration was $4.37 per patient. This has brought the total direct costs of treatment during 1942 to about $8,000,000. Payments to veterans with either partial or total disability due to tuberculosis, whether or not service-connected, amounted to approximately $40,000,000 during the fiscal year 1942. It is notable that the number of such cases for World War I still numbered 63,000 in 1942. The great majority of such persons are receiving pensions for permanent partial disability. The number receiving disability payments is many times that receiving treatment in hospitals. The amount paid in disability claims over the last twenty-five years is in the neighborhood of a billion dollars. In addition, there have been substantial payments to dependents of tuberculous veterans who have died.

In spite of the extraordinary development of the services for tuberculous veterans, the experience of the veterans' hospitals has been unfavorable. Thus, in 1942, of the 9,854 cases discharged from these hospitals, only 1.9 per cent were designated "arrested" at discharge; only 0.3 per cent "apparently arrested," and only 0.8 per cent "quiescent." If we combine these three categories, the fact emerges that only 3 per cent of the patients discharged during the year were medically rehabilitated. The remainder of the cases were discharged as "condition improved" 32.7 per cent; "condition unimproved" 28.9 per cent; "dead" 19.5 per cent; and "condition not

stated " 16.0 per cent. It is clear that the vast majority of the patients discharged were not yet ready to be released to civilian life. The so-called " improved " cases represent, for the most part, patients with unstable lesions. As a matter of fact, a very large proportion of them left without authorization or consent. Thus, the Veterans' Administration itself classified the hospitalization of 58 per cent of the cases as " incomplete." The 1942 figures on condition at discharge from the Veterans' hospitals are rather typical, somewhat worse but not greatly different from those of earlier years. At no time since 1929, when the present type of report of the Veterans' Administration began, has the total for the " arrested," " apparently arrested," and " quiescent " reached 6 per cent.

Admittedly, one cannot make exact comparisons among various sanatoria as to results of treatment on the basis of crude figures of this type. This is particularly true now, for with the passage of the years, the usual case admitted to the veterans' hospitals is of the chronic type common among middle aged and older persons. Thus, of recent admissions, only 4 per cent were " incipient " cases, 22 per cent were " moderately advanced," and 74 per cent were " far advanced." With all due allowance for this fact, there is a painful contrast between these recent figures (as well as those of earlier years) and the results obtained in well managed state, municipal, and private sanatoria. Thus, in a country-wide survey of tuberculosis hospitals and sanatoria in the United States during 1933–1934, made by the American Medical Association, patients with tuberculosis " arrested," " apparently arrested," or " quiescent " on discharge, accounted for 29 per cent of the total discharged. A survey of discharges from the Michigan State sanatoria from 1930 to 1934 also showed a high proportion of cases in these three categories—61 per cent of the total discharged. The experience of the Mount McGregor Sanatorium of the Metropolitan Life Insurance Company for males discharged between 1919 and 1936, and *excluding incipient cases,* showed that 48 per cent, or practically half of the cases, were " arrested," " apparently arrested," or " quiescent " on discharge; and even for the cases far advanced on admission, this proportion was 34 per cent.

There are clear reasons why this deplorable situation among tuberculous veterans has developed. The failure is not due to lack of desire to help these men. It was certainly the aim of everyone connected with the service to do as much as possible for them. The chief difficulty was lack of appreciation on the part of legislators and others interested in veteran welfare, of certain fundamental conditions necessary for the effective treatment of tuberculous patients. In part, outside pressure was brought to bear to liberalize financial provisions for these veterans. The effect of these measures has been to reduce control over the movement of tuberculous patients to a minimum. The veterans are not subject to the usual type of hospital restrictions, but may come and go almost at will, irrespective of their condition and against medical advice. There are cases on record where veterans with tuberculosis have left and then been readmitted as many as 24 different times. Six to 8 admissions of the same patient are a common occurrence in spite of much effort on the part of Administration officials to educate and persuade patients to stay in hospitals until completion of treatment, and in spite of certain measures to control offenders through exclusion from re-hospitalization for certain periods. The type of discipline that is so essential to success in the care and treatment of the tuberculous patient is lacking, for the most

part, in veterans' hospitals. Indeed, the laws and practices relating to these veterans have so developed that it is often financially advantageous for the patient to leave or to stay away from the hospital altogether. This, of course, is an impossible situation. It has served to undermine the morale both of the tuberculous veterans themselves and of the doctors and other members of the professional staffs serving them.

But the situation in the veterans' hospitals has had results which most health officers will consider more serious even than failure to rehabilitate men already suffering from the disease. The discharge of men before they are cured has left its toll on the entire country. It has allowed thousands of veterans with active tuberculosis to return to civilian communities each year. It has made it possible for fairly large numbers of open cases to live at home, under little or no medical supervision. These men have traditionally been looked upon as wards of the federal government and consequently the state and local health officers have taken little responsibility for them. Actually, however, the control of the Veterans' Administration over these men has been rather loose. Few of the patients have gotten well; the great majority have constituted an army of discouraged men who have become centers of infection for new cases of tuberculosis in the communities to which they have returned after treatment in the veterans' hospitals.

The authorities in the Veterans' Administration, as well as leaders in veterans' affairs, have become aroused to the need of correcting this whole situation. It will not be any easy task because it involves a rather complete change in viewpoint, and it touches what may be called a "vested interest" in certain benefits. Consideration is now being given to specific methods of improving matters, and, in due course, the necessary legislative measures will come up for consideration. In an effort to get tuberculous veterans to resume sanatorium treatment and stay until satisfactory results are obtained, the American Legion is launching a campaign to have each local branch do the necessary missionary work among members in its own locality and to see that the veterans continue hospital treatment until discharge by the doctor.

As health officers, you can help in many ways. First of all, you can bring pressure to bear for revision of the generous but ill-advised legislation that has been in part responsible for present conditions. The current laws are altogether too loose in their benefits to veterans. There must be new controls to make these benefits not only liberal but medically effective. Legislation must discourage the uncontrolled movement of tuberculous veterans until the disease is "arrested" or at least until it is not a community menace, just as the movement of psychiatric veterans is supervised and curtailed.

Second, you can coöperate with the Veterans' Administration in the follow-up of tuberculous patients who have left veterans' hospitals. The Veterans' Administration has indicated that it will release such information to state and local health officers, and routine procedures for getting such reports should be set up without delay. It will be the responsibility of your departments to make available locally the necessary social and medical services for those tuberculous veterans who are unwilling to use the federal facilities. If these men are still in need of sanatorium care, they should be hospitalized either in state or local sanatoria. Whenever it seems necessary to invoke your legal power to enforce compulsory hospitalization or isolation, you must do so.

Apart from this, I would suggest that each of you investigate independently the facts with reference to tuberculous veterans in your own state or community. A canvass and follow-up of the list of those who are reported to have tuberculosis would probably show many such cases in your jurisdictions. As I have indicated, most of them are middle aged men, many of them centers of infection and chronic offenders against all reasonable hygienic precautions. Because of their status as veterans and their habituation to the loose hospital discipline which I have mentioned, they feel privileged to do pretty much as they please. These men should be sought out and cared for, and, if necessary, isolated for the protection of their families and their neighbors. I am convinced that this situation in your local communities constitutes one of the most serious difficulties in the national effort to eradicate tuberculosis.

Frankly, I do not know how much we shall be able to accomplish with the old veterans. But I feel that a genuine and earnest effort must be made to protect the new and large crop of tuberculous veterans who will inevitably emerge from the present war. As early as the beginning of July, 1942, their number had already exceeded 800. By this time, the war's tuberculosis victims are probably counted in thousands. From present indications, there is danger that the Veterans' Administration may be compelled to function under the same regulations and procedures which govern the care of veterans of World War I. There is already evidence that all is not well with the new tuberculosis victims, and that they are showing the same restlessness, the same abandonment of regular hospital care, which has produced such calamitous results among the older men. The stage may be set for another great medical tragedy; and unless we take action, I believe that lack of discipline and mistaken generosity may not only take their toll of these young men—who should by all reason get well and be sent back to their communities to take up a useful life again—but may also seriously delay our control of tuberculosis in the general population of the country.

But we can avoid such a situation. I am calling these difficulties to your attention because they can be met and rectified right now, if we all work together toward a sensible program at the start. The present situation is far more favorable than it was during the last war. We have at our disposal excellent medical facilities and improved skills in treatment. The new crop of tuberculous veterans is more apt to be in the early stage of the disease, when cure or arrest is most rapid and sure. The Veterans' Administration and the American Legion are both aware of the seriousness of the situation and are eager to coöperate with the state and local health officer in any plan to help veterans to be cured and to protect the families of the men from infection. Working toward the same objectives, you health officers, together with these two organizations and with a public and government both increasingly aware of their responsibilities toward the veterans of this war, should be able to bring about really constructive action. Through such an outlook and such teamwork, the young tuberculous veterans should benefit by every medical facility and enlightened service we can offer. There is every reason why a large proportion of them should return to their homes as productive citizens, rehabilitated medically and industrially. As health officers, you have an extraordinary opportunity to contribute to this program, and to shape the future of these veterans, as well as of the tuberculosis movement all over the country.

Public Health Degrees and Certificates Granted in the United States and Canada During the Academic Year 1942-1943*

THE Committee on Professional Education of the American Public Health Association presents a report of public health degrees and certificates granted in the academic year 1942–1943. With the exception of public health nursing tables, the committee has included only graduate students enrolled in courses leading to graduate degrees and certificates. The basis for the record is *the number of students who received degrees* rather than the number of degrees granted in the specified period.

Graduate Students Enrolled and Degrees Granted in Public Health Engineering and Sanitary Engineering Courses in the Academic Year 1942–1943

TABLE 1

Name of University	*Number of Graduate Students Registered*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree*
Agricultural & Mechanical College of Texas	4	Ph.D.	0
		M.S.	1
Cornell University	0	None	0
Harvard University	12 [1]	Sc.D.	1
		M.S.	8
Iowa State College	1	None	0
Johns Hopkins University	3	Dr.Eng.	1
		M.P.H.	1
		M.C.E.	0
Massachusetts Institute of Technology	1	Ph.D.	0
		Dr.P.H.	0
		Sc.D.	0
		S.M.	1
New York University	11 [2]	Dr.Eng.Sc.	0
		M.C.E.	3
Pennsylvania State College	0	Ph.D.	0
		M.S.	0
Rutgers University	0	Ph.D.	0
		M.Sc.	0
		M.A.	0
Stanford University	2	Eng. in C.E.: San.	2
		M.A. in C.E.: San.	0

[1] In addition 11 students taking a 3 month course not leading to a degree
[2] Part-time students enrolled for graduate degrees

* For previous reports see *A.J.P.H.*, Vol. 32, p. 1360; Vol. 31, p. 1306; Vol. 30, p. 1456; Vol. 29, p. 1338; Vol. 28, p. 863; Vol. 27, p. 1267; Vol. 26, p. 819; Vol. 25, p. 341; Vol. 23, p. 1124.

TABLE 1 (Cont.)

Name of University	*Number of Graduate Students Registered*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree*
University of Alabama	0	M.S. in P.H.E.	0
		M.S. in S.E.	0
University of California	0	M.S.	0
University of Illinois	0	Ph.D. (San. Eng.)	0
		M.S. (San. Eng.)	0
University of Iowa	0	Ph.D.	0
		M.S.	0
University of Kansas	0	M.S.	0
University of Michigan	8	M.P.H.	1
		M.S.P.H.E.	1
University of Minnesota	18	Ph.D. (San. Eng.)	0
		M.P.H.	1
		M.S.P.H.	0
		M.S. in C.E. (San. Eng.)	0
University of Missouri	0	None	0
University of North Carolina	3	M.S. in S.E.	2
		M.S.P.H.	0
		M.P.H.	0
University of Toronto	1	M.A.Sc.	1
West Virginia University	0	M.S.C.E. (San. option)	0
	64		24

Classification of Graduate Engineering Degrees and Certificates Granted in the Academic Year 1942–1943

TABLE 2

Degree or Certificate	*Number of Students Receiving Degrees*	*Number of Schools Offering Each Degree*
Doctor of Philosophy	0	7
Doctor of Public Health	0	1
Doctor of Engineering	1	1
Doctor of Science	1	2
Doctor of Engineering Science	0	1
Master of Public Health	3	4
Master of Science in Public Health	0	2
Master of Science in Public Health Engineering	1	2
Master of Science in Sanitary Engineering	2	2
Master of Science in Civil Engineering	0	2
Master of Science	10	9
Master of Civil Engineering	3	2
Engineer in Civil Engineering	2	1
Master of Arts in Science	1	1
Master of Arts	0	1
Master of Arts in Civil Engineering	0	1
	24	

In the academic year 1941–1942, 163 graduate students were enrolled in public health engineering and sanitary engineering courses as compared with 64 in the academic year 1942–1943. Graduate degrees and certificates granted in the academic year 1941–1942 totaled 89 as compared with 24 in the year 1942–1943.

Enrollment in Public Health Courses and Degrees and Certificates Granted in the Academic Year 1942–1943

(Exclusive of Engineering and Nursing Students)

Number of graduate students enrolled and public health degrees and certificates conferred during the academic year 1942–1943 by United States and Canadian Universities. The professional background of the students is given where known.

TABLE 3

Name of Institution	*Total Number of Graduate Students Registered*	*Physicians*	*Dentists*	*Health Educators*	*Public Health Laboratory Workers*	*Statisticians*	*Nutritionists*	*Teachers*	*Epidemiologists*	*School Health Personnel*	*Nurses*	*Public Health Engineers*	*Sanitarians*	*Industrial Hygienists*	*Social Workers*	*Unclassified*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree and Certificate*
Delamar Institute of Public Health, Columbia University	24	22	2	..	..	..	..	..	..	..	..	..	..	..	..	..	Dr.P.H. M.S.P.H.	0 18
Harvard School of Public Health	19	12	..	2	..	3	1	..	..	..	1	..	..	..	..	..	Dr.P.H. M.P.H. C.P.H.	1 6 3
Johns Hopkins University	41	34	..	..	..	3	..	1	..	..	2	..	..	..	..	1	Dr.P.H. M.P.H. Sc.D. in Hyg. Sc.M. in Hyg.	2 31 0 0
Loyola University	7	1	..	..	1	..	..	1	..	..	..	1	3	..	..	..	Dr.P.H. M.S.P.H.	0 1
Massachusetts Institute of Technology	29	4	1	9	12	..	1	1	..	..	..	..	..	..	1	..	Dr.P.H. M.P.H. C.P.H.	0 14 11
McGill University	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	D.P.H.[1] D.V.P.H.[2]	1 0
School of Tropical Medicine, Department of Public Health, Puerto Rico	14	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	C.M.T.[3]	14
State College of Washington	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	C.P.H.	0

TABLE 3 (Cont.)

Name of Institution	*Total Number of Graduate Students Registered*	*Physicians*	*Dentists*	*Health Educators*	*Public Health Laboratory Workers*	*Statisticians*	*Nutritionists*	*Teachers*	*Epidemiologists*	*School Health Personnel*	*Nurses*	*Public Health Engineers*	*Sanitarians*	*Industrial Hygienists*	*Social Workers*	*Unclassified*	*Graduate Degrees Offered*	*Number of Students Receiving Each Degree and Certificate*
University of California	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	Dr.P.H. M.A.	0 0
University of Kentucky	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	M.S.P.H.	0
University of Michigan	32	10	7	2	2	3	2	..	3	1	..	..	..	2	..	..	Dr.P.H. M.P.H.	2 15
University of Minnesota	4	1	..	..	..	1	..	..	..	..	..	..	1	..	..	1	Ph.D. M.P.H. M.S.	0 0 1
University of North Carolina	72	25	..	26	1	..	..	..	..	..	..	..	5	..	..	15	Ph.D. Dr.P.H. M.S.P.H. M.P.H. C.P.H.	0 0 0 1 0
University of Pennsylvania	14	12	2	..	..	..	..	..	..	..	..	..	..	..	..	..	Ph.D. M.P.H. M.S.	1 2 2
University of Toronto	22	21	1	..	..	..	..	..	..	..	..	..	..	..	..	..	Ph.D. D.P.H.[1] M.A.	0 19 0
Vanderbilt University	7	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	M.P.H.	2
Yale University	34	6	..	6	6	2	2	1	..	..	..	..	1	..	1	9	Ph.D. Dr.P.H. M.P.H.	1 2 9
Totals	323	157	13	46	36	13	6	4	3	1	3	1	10	2	2	26		159

[1] Diploma in Public Health
[2] Diploma in Veterinary Public Health
[3] Certificate in Medical Technology

Classification of Public Health Degrees and Certificates Granted in the Academic Year 1942–1943

(Exclusive of Engineering and Nursing Degrees and Certificates)

TABLE 4

Degree or Certificate	*Number of Students Receiving Degrees and Certificates*	*Number of Schools Offering Each Degree and Certificate*
Doctor of Public Health	7	9
Doctor of Science	0	1
Doctor of Philosophy	2	5
Master of Public Health	80	9
Master of Science in Public Health	19	4
Master of Science	3	3
Diploma in Public Health	20	2
Certificate in Public Health	14	4
Master of Arts	0	3
Diploma in Veterinary Public Health	0	1
Certificate in Medical Technology	14	1
Total	159	

In the academic year 1941–1942, 466 graduate students were enrolled as compared with 323 in the academic year 1942–1943. Graduate degrees and certificates granted in the academic year 1941–1942 totaled 269 as compared with 159 in the year 1942–1943.

Degrees and Certificates Granted in Public Health Nursing Courses for the Academic Year 1942–1943

Table 5, below, indicates the number of students who received degrees and certificates for the academic year 1942–1943. These figures have been compiled by the National Organization for Public Health Nursing and are printed here with permission.

TABLE 5

Name of University	*Number of Students Receiving Each Degree and Certificate*		
	Baccalaureate Degrees	*Masters Degrees*	*Certificates*
Catholic University of America	6	0	6 [1]
Columbia University	42	11	0 [1, 2]
Duquesne University	3	0	5
George Peabody College for Teachers	21	2	40
Indiana University	9	0	0 [1]
Loyola University	6	0	11
Marquette University	2	0	11
Medical College of Virginia	0	0	21
New York University	46	17	0
St. John's University	2	0	0
St. Louis University	9	0	1 [3]
Seton Hall College	1	0	2
Simmons College	2	0	46
Syracuse University	7	0	30
University of Buffalo	6	0	5
University of California, Berkeley	40	0	39 [4]

[1] Does not grant certificate. If number is entered, the number indicates students who have completed the program of study in public health nursing.

[2] It is estimated that 40 additional students may have completed work of the major in 1942–1943.

[3] Certificate issued to holder of a degree in nursing education. St. Louis does not usually grant certificates.

[4] Certificates following B.S. degree.

[5] Certificates were granted to 15 students with B.S. degrees before entering course in public health nursing. Students earning a degree at Minnesota will automatically be given a certificate.

(Continued)

TABLE 5 (Cont.)

Name of University	Number of Students Receiving Each Degree and Certificate: Baccalaureate Degrees	Masters Degrees	Certificates
University of California, Los Angeles	22	0	29
University of Chicago	2	0	0[1]
University of Colorado	1	0	6
University of Michigan	10	2	15
University of Minnesota	80	6	0[5]
University of North Carolina	1	0	7
University of Oregon	43	0	31
University of Pennsylvania	5	2	42
University of Pittsburgh	13	0	0
University of Washington	8	1	24
Vanderbilt University	1	0	20[1]
Wayne University	6	0	10
Western Reserve University	14	2	42
Totals	388	43	443

[1] Does not grant certificate. If number is entered, the number indicates students who have completed the program of study in public health nursing.

[5] Certificates were granted to 15 students with B.S. degrees before entering course in public health nursing. Students earning a degree at Minnesota will automatically be given a certificate.

General Summary Table of Degrees and Certificates Granted in All Schools Covered in This Report During the Academic Year 1942–1943

TABLE 6

Doctor of Public Health	7
Doctor of Science (Engineering)	1
Doctor of Philosophy	2
Doctor of Engineering	1
Master of Public Health	80
Master of Public Health (Engineering)	3
Master of Science in Public Health	19
Master of Science in Public Health Engineering	1
Master of Science in Sanitary Engineering	2
Master of Science	3
Master of Science (Engineering)	10
Master of Civil Engineering	3
Engineer in Civil Engineering	2
Master of Arts in Science (Engineering)	1
Master's Degrees (Nurses)	43
Baccalaureate Degrees (Nurses)	388
Diploma in Public Health	20
Certificate in Public Health	14
Certificates (Nurses)	443
Certificate in Medical Technology	14
Total	1,057

In the academic year 1941–1942, 27 different degrees and certificates were awarded as compared with 20 different degrees and certificates in the academic year 1942–1943.

W. P. SHEPARD, M.D., *Chairman*

Air Disinfection in Day Schools*

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THE prevalence of respiratory infection during the season of indoor congregation [1] suggests a natural relationship between ventilation and communicable disease. Reduction by radiant air disinfection, of surgical infection [2] and cross-infection between sick children continuously exposed in pediatric wards,[3] and continuous aggregations of infants in a nursery [4] and children in an orphanage [5] and dynamic spread of childhood contagion [6] through intermittent aggregations in classrooms of day schools [7] offers experimental evidence of the importance of sanitary ventilation in the control of respiratory disease. It may not now be premature in the interest of good design, to attempt a preliminary comparison of results from 6 years' study in one irradiated school with the results obtained under a different design during 3 years in two other schools.

Germantown Friends School

The educational standards which attracted pupils from a select class in a large urban population to the Germantown Friends School contributed much to the significance of the data. The social stability of this class insured unusual continuity of the pupil population from entering susceptibility to graduating immunity, giving cumulative significance to epidemiologic school experience. The dispersal of the pupils through a narrow social stratum of a wide population minimized simultaneous exposure to local epidemics outside the school which might confuse the school pattern. Intelligent coöperation of the staff and parents guaranteed the reliability of the intimate records essential to intensive analysis of the spread of contagion, and health records available for the previous 5 years provided a helpful background.

School arrangements were also well fitted to the needs of the study. Except for a corridor connecting the third floors of the two buildings, the four susceptible primary grades were separated from the four intermediate and four senior grades. Each grade was divided into two classes of approximately 20 pupils in similar classrooms of about 6,000 cu. ft. capacity, ventilated by windows. Irradiation of the upper region of each "home" room above the 7 ft. level, by two crossed "Safe-t-aire" quartz tubes in a shallow aluminum pan reflector, especially designed for the purpose by the Hanovia Chemical and Manufacturing Company, provided uniform air disinfection. Central fixtures were also hung in the nature and music rooms and in the library, but corridors, lunchroom, gymnasium, shop and restroom were equipped according to special

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* Presented in part before the Engineering Section of the American Public Health Association at the Seventy-first Annual Meeting at St. Louis, Mo., October 30, 1942.

† Supported by a grant from the Commonwealth Fund to the University of Pennsylvania for the study of the mechanics of air-borne infection and control.

needs. Correlation of sanitary and epidemiological indices of disinfection of standard " home " rooms then became the specific objective of the study.

SANITARY INDICES

Irradiation—The lethal rating of a tube was given as 1,000 milliwatts of 2,537 Å radiation. In a uniform parallel beam (as from the sun) radiation from two tubes could theoretically irradiate a cube of the same volume as a room to an intensity of 6.06 mw. per sq. ft.[8] Since not more than half the radiation in all directions can be realized from artificial sources in a room with nonreflecting walls, the theoretical irradiation from half the lethal rating is arbitrarily adopted as 100 per cent efficiency.[9] Irradiation efficiency is then derived from average intensity * (1.25 mw. per sq. ft.), yielding 42 per cent efficiency of irradiation.

Air Disinfection—It is possible by defining the lethal equivalent of an air change to express air disinfection in ventilation terms. The lethal rates of most pathogenic air-borne bacteria when exposed to ultra-violet radiation are similar enough to define the disinfection unit equivalent to one air change as the exposure required to reduce *Escherichia coli* atomized into dry air by 63.5 per cent—called a *lethe*. Thus it has been found that as uniformity of exposure is approached, a milliwatt foot of 2,537 Å radiation [9] will approach the sanitary equivalent of a cubic foot per minute of air displacement, and we may assume for practical purposes this arbitrary definition of a *foot lethe* as the unit of radiant disinfection of air. Efficiency of disinfection, however, falls with variable exposure to different intensities indicated by low irradiation efficiency, but air circulation tends to equalize exposure of air-borne organisms to variable intensities. The foot lethe equivalent of an air change per minute determined by bacteriological methods [10] at the Germantown Friends School, divided by the computed milliwatt feet, gave 63 per cent disinfection efficiency. This effective utilization of irradiation certifies to the propriety of correlating this sanitary index with epidemiologic indices.

EPIDEMIOLOGIC INDICES

Secondary Class Incidence—An epidemiologic index of sanitary ventilation requires estimation of exposure, incidence, and susceptibility. Where outside exposure is eliminated by continuity of aggregation, and other modes of spread can be controlled, total incidence of respiratory disease may indicate air-borne infection. Uncertainty of diagnosis, multiplicity of exposure, and doubtful immunity, vitiate indices based upon colds among intermittent aggregations.[7] Childhood contagions, largely confined to a narrow age stratum, and therefore less subject to simultaneous class incidence from extramural exposure, provides the best index of air-borne infection in schools.[7] If we assume cases of measles, mumps, and chicken pox to be classroom infections when they appear within a proper incubation period after classroom exposure to pupils in an infective stage, the error will be small compared to difference needed to make contagious disease data significant. Though less determinate, this procedure is basically analgous to determining secondary attack rates in families.

Patterns—The occurrence of epidemic respiratory contagion among school children need not reflect upon the efficiency of sanitary barriers unless sanitary ventilation is generally practised in the community. Successful control of spread of contagion within the school will, on the other hand, alter

* Milliwatt feet divided by room volume in cubic feet.

Milliwatt feet = the summed products of angular flux density and radiant distance in feet [9]

epidemic rates and proportionate incidence, and ultimately modify immunity patterns in a school population. Thus increased susceptibility of grades following irradiation of the primary school, together with lower rate of spread and proportion of class secondaries may provide a more reliable index of sanitary control than comparisons of incidence between small "controlled" groups, for exposure cannot be "controlled." Conversely, successful control will indicate the importance of an aggregation among community channels of contagion spread.

Results—During the first year (1937-1938), 89 children in four primary classes constituted a protected group, and the same number of similarly susceptible children in four corresponding classes constituted a control group. Seven introductions of mumps into each group resulted in 12 secondary cases in the control group and only 2 in the protected group.

The whole primary department was irradiated during the next session, when another epidemic of mumps, commencing on October 3, spread dynamically (27 cases) through the intermediate department (65 per cent susceptible), but flickered out in both the primary and senior departments. Failure of epidemic spread in the senior department might be explained by lower susceptibility (56 per cent), but more probably by irradiation of the more susceptible (74 per cent) primary department.

Chicken pox introduced 21 times into the primary department (average susceptibility 59.8 per cent) between December and the closing of schools (1939-1940), resulted in only 7 possibly secondary infections. An explosive outbreak in a particular class singled out to rehearse a school play in an unirradiated auditorium, however, exhibited a typical air-borne pattern. On 4 successive days this class was exposed to a missed case (sole secondary to a previous class exposure under the lights), diagnosed the evening before the play, and between the 14th and 20th day following the first day of exposure (May 8), 15 out of the 16 reportedly susceptible children came down in a static type of epidemic characterising intense common-source exposure.

SWARTHMORE STUDIES

The results of the first 3 years at the Germantown Friends School encouraged the extension of the demonstration to the small socially isolated college community of Swarthmore. The educational ideals of this community attracted an intellectually selected class of residents from Philadelphia, insuring in a public school system the epidemiologic advantages enjoyed in the private school at Germantown and similar epidemiologic opportunities to study the part the school played in community spread of a contagion. School cases embracing the whole childhood population became identical with community cases; so differentiation of outside and school exposure distinguished the part the school played in the community commerce in contagion.

The primary grades (kindergarten through the 6th grade) are accommodated in two schools, both merging into one high school of the 6 upper grades. The College Avenue Primary School is located on the same grounds as the High School, but the Rutgers Avenue School is about a mile away. This exposure of one-half of the primary population to upper grades constitutes an interesting variation between two otherwise equivalent epidemiologic and sanitary situations.

The modern school buildings were designed according to standard (Pennsylvania) specifications as to space, light, and ventilation. Mechanically ventilated classrooms of about 7,000 to 8,000 cu. ft. capacity, each accommo-

dating some 20 to 30 pupils, were equipped with four 30 watt fluorescent type of "Germicidal" tubes in high transmission glass, provided with fixtures by the General Electric Company. Corridors, lunchroom, gymnasium, and other places where children mingle, were not irradiated—an epidemiologic opportunity but a sanitary error.

Sanitary Indices—Two reflectors were installed on each end wall at 7 ft. levels, and not being specially designed for the purpose, directed the light beam upward at an angle of 60° from horizontal to avoid direct irradiation of the occupied zone. Only the remote angles between the end wall and ceiling were heavily irradiated, and ray lengths were limited to the distance between the light and the ceiling. Though the rated lethal radiation from the four tubes was tenfold that in the rooms at Germantown, the average irradiation in milliwatt feet per cubic foot (7.64) was only five times greater. The lower efficiency of irradiation (28 per cent as against 42 per cent) indicates a poorer distribution of irradiation, and a correspondingly low efficiency of disinfection (26 per cent as compared to 63 per cent at Germantown) yielded only two equivalent air changes per minute. The steep concentration gradients shown by tests made at different points in the room also indicated non-uniform exposure of the organisms.

MEASLES [7]

During the 8 months, October, 1940, to May, 1941, more than 25,000 cases of measles were reported in Philadelphia —the largest number on record. Though the total cases in the Germantown Friends School and also in the Swarthmore schools exceeded the number in any one of the previous 10 years, this was not due to cases in the protected primary classes, but in the upper unirradiated grades where more than twice the total of the previous 9 years occurred. Only 32 per cent of the school cases occurred in the irradiated classes, while 77 per cent occurred in these grades prior to irradiation. Since exposure outside the classrooms varies inversely with the proportion of school secondaries, the difference in irradiated and unirradiated rooms is even greater than these percentages indicate.

In the town of Swarthmore, hardly more than one-third (37.5 per cent) of the cases occurred at primary school ages, and nearly one-half (46.1 per cent) at high school age, but in Philadelphia as a whole, as in previous years, two-thirds of the cases occurred in primary school ages. In the district adjoining Swarthmore, the attack rate in three primary Nether Providence Schools was four times that in the corresponding high school, and in the grades corresponding to the irradiated grades of the Germantown Friends School, at the nearby William Penn Charter School, there were five times as many cases as in the upper grades.

Weekly attack rates among susceptibles in upper unirradiated classrooms were five times higher than in the irradiated primary classrooms. In the two primary schools sharing grounds with the upper schools, the attack rate was double that in the isolated Rutgers Avenue School at Swarthmore, though home secondaries showed no significant difference, and the small proportion of class secondaries also implicated upper school exposure rather than epidemic spread within their own classrooms. The curve of proportionate decline in the percentage of susceptible children in irradiated and unirradiated rooms during the course of this epidemic (Chart I) shows higher percentage susceptibility in the protected classes after the epidemic had passed than in the control classes before it commenced. The inflection point of this curve coming 13 days (incubation period of measles) after that for the unirradiated classes, like-

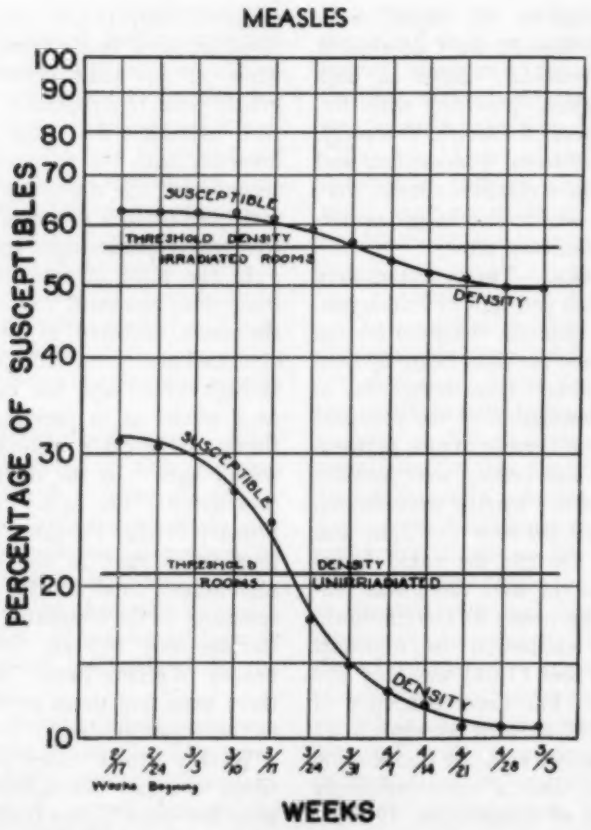

CHART I—Measles susceptibility in Germantown Friends School and Swarthmore Public Schools during 1941 epidemic (primary classrooms irradiated). Threshold density of susceptibles indicated at point of inflection in accordance with McKendrick's theory.

wise indicates secondary spread from the unirradiated school rather than dynamic spread within the primary irradiated classrooms.

The swift course of the epidemic through the schools swept out susceptibility before secondary spread in the community could become established, and so accounts for the similarity in pattern at the Germantown Friends School and in Swarthmore. Occasional class secondaries in some of the irradiated Swarthmore classrooms were overlooked, since the lights were not operated from a central switch as at Germantown, but responsibility rested on each teacher for her room, and more than once the principal was called out after sundown to attend to a "peculiar violet light" in his school.

MUMPS[6]

The dynamic pattern of spread of mumps through the community of Swarthmore during the succeeding year accentuated epidemiologic and sanitary complications in an experimental study of air-borne infection among human aggregations. A case of mumps, exposing the 3rd grade of the College Avenue School on September 29 and 30, detonated an explosive accumulation of

susceptible material. On the second and third generations, synchronous epidemic waves were initiated in the 1st and 2nd grades, respectively. Waves of decreasing amplitude then fanned out on an ever-widening front through the entire population of Swarthmore during the remainder of the season.

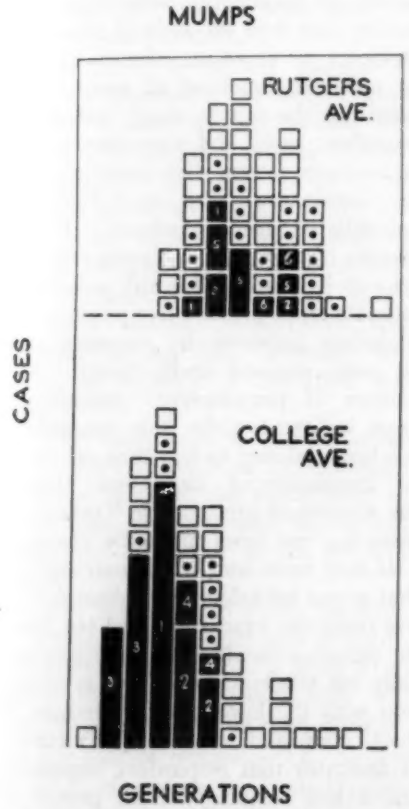

CHART II—Mumps in Swarthmore Primary Schools, 1941–1942. Cases plotted against generation periods. First introduction September 30. Each bar represents one generation period beginning October 7, 25, November 10, 27, December 14, January 1, 19, February 6, 24, March 14, April 1, 19, May 9. Black bars indicate class secondaries defined by cases occurring from 13th to 22nd day after class exposure on day of onset or previous day. White numbers on black bar represent the grade. White squares represent extra class infections. Black dots indicate home secondaries.

The localization of epidemic classroom spread (indicated in black on Chart II), to classes exposed during the fall, contrasts with the generalized endemic smouldering through the community after classroom spread ceased with the onset of cold weather. Thus the secondary class incidence at the College Avenue School, exposed earlier in the season, was more than double that in the more susceptible and more heavily exposed Rutgers Avenue School. In three primary classes first attacked, 32 out of 42 cases could have been secondary to 23 classroom exposures, but only 15 of 73 cases in 11 remaining primary grades of comparable susceptibility could have been secondary to 30 class exposures. Similarly, 31 of 51 cases in the two primary schools could have been infected by 18 class exposures between September 30 and November 19, yet 53 class exposures between November 18 and April 7 could account for no more than 16 of the 64 cases infected after November 18, and probably some of these were extra-class infections. Some factor favorable to epidemic spread of mumps during mild, moist, fall weather appeared to be under control during the cold winter weather.

Epidemic spread of mumps through these irradiated classrooms in the fall, if air-borne, presents a sanitary complication. Direct experimental evidence that mumps virus can be spread through the air, or destroyed by ultra-violet lights, is indeed lacking, and the epidemic behavior of mumps is notoriously erratic. But epidemiologic evidence indicates that "the infective agent of mumps is transmitted by the air"[11] epidemically as well as endemically by salivary communism,[12] and epidemic spread in irradiated classrooms seemed in previous winters to be controlled, and ceased this year with onset of cold weather. An air-borne pattern between the season of abundant window ventilation and the season of dry indoor air

could be explained if the viricidal efficiency of the irradiation is decreased at high humidity.[13] Between September 30 and November 19, weather reports indicate that on 16 days indoor relative humidity exceeded 70 per cent; on 19 days 60 per cent, and 27 days 50 per cent, accountable for a loss of more than half of the bactericidal efficiency in dry indoor air during cold weather when classroom spread was checked. The problem, however, is too serious to be dismissed without further exhaustive laboratory and field investigation.

During the winter, the school now plays a more important rôle in spreading contagion among high school ages than among the primary school children in the town of Swarthmore, and the College Avenue School similarly plays a more important rôle in the spread of contagion among primary school children than the Rutgers Avenue School. Except for minor episodes unattributable to design, but which do emphasize the importance of vigilant servicing, the last year has been uneventful.

DESIGN

A truly quantitative specific secondary attack rate would require correction for time and intensity of exposure, multiple infections, and susceptibles exposed. Under epidemic conditions where rapidly increasing exposure corresponds with a large decrease in susceptibility, the correction would be greater than under sporadic conditions of spread. In fact, the necessary condition of epidemic spread, a higher specific secondary incidence than specific exposure, would normally be unobserved, for indicated secondary incidence ordinarily approaches indicated exposure. Actual differences in rate of spread would therefore exceed differences in the indicated ratio of secondary incidence to exposure.

During the period of dry indoor air, about one in every four exposures of irradiated classrooms to measles, mumps or chicken pox was followed by one or more secondary cases, both at the Germantown Friends School and in the Swarthmore primary schools. A third more cases per outbreak at the latter indicates that failures, though no more frequent, were more serious—epidemiologic confirmation of the sanitary indices of disinfection efficiencies. In neither case does the ratio of secondary incidence to exposure correspond with an epidemic condition of spread indicated by the nearly equal number of secondary cases and exposures in the unirradiated intermediate department of the Germantown Friends School and unirradiated primary schools. In the absence of records of classroom exposure prior to irradiation, it is still possible to estimate crude presumptive primary and secondary incidence by assuming that all cases exposed their classes. The number of presumptive "secondary" cases indicated under this assumption has been reduced to less than one-third by irradiation of classrooms, though the number of presumptive "primary" cases has not been markedly changed.

It may seem somewhat contradictory that rooms with double the disinfection, five times the irradiation, and ten times the radiation should prove to be hygienically less efficient, though this is consistent with the lower sanitary indices of disinfection and irradiation efficiencies. It indicates that respiratory organisms travel less frequently from person to person through lethal zones. Bacteriological tests showed that rotation of the reflectors to throw a horizontal beam across the room increased irradiation more than threefold and disinfection more than tenfold. That an even greater hygienic efficiency can be expected has been indicated by the superior epidemiologic indices within rooms with one-half the disinfection and one-fifth the irradiation but with higher disinfection and irradiation efficiencies.

SUMMARY AND CONCLUSION

1. Epidemic spread of childhood contagion in irradiated classrooms during winter months appears to have been checked for 6 years at the Germantown Friends School and for 3 years in two primary schools at Swarthmore. Measles, mumps, and chicken pox prevailed during the same period in unirradiated classrooms in these schools and in nearby primary schools.

2. Epidemic spread of mumps in irradiated classrooms (of one of these schools) exposed during the fall was checked with the onset of cold weather.

3. Failure of the lights to control the epidemic spread of mumps during the moist, mild autumn weather suggests that the viricidal activity of ultra-violet light decreases with humidity. When respiratory infection is normally most prevalent during cold weather and indoor air is dryest, irradiation was efficient.

4. The importance of the classroom in the epidemic spread of childhood contagion through the community of Swarthmore was revealed by radiant disinfection of the air of the primary schools.

5. The design which yields the highest average intensity per unit of ultraviolet light radiated into a room (i.e., highest efficiency of irradiation) will generally accomplish the most disinfection per unit of intensity (i.e., highest efficiency of disinfection), and prove hygienically more effective per unit of disinfection (i.e., highest hygienic efficiency). An installation with several times the radiation per cu. ft. performed less consistently, according to epidemiologic indices, than one with higher efficiencies of irradiation and disinfection.

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ACKNOWLEDGMENT—Though many to whom I am indebted for the data utilized in this discussion have been recognized in the references, I am especially indebted to Dr. Mildred W. Wells and Dr. Theodore S. Wilder for the privilege of examining the full epidemiologic data soon to be reported, which undoubtedly influenced the opinions here expressed.

Some Medical Aspects of Protein Foods*

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SINCE protein in adequate quantity and quality is necessary for all forms of life, its relation to problems of health and disease are without limit. But to be more specific and practical one may mention some of the problems of medical interest where there is experimental evidence for the importance of protein. Some of these are listed in Table 1.

TABLE 1

Problems of Medical Interest Related to Protein Foods

Physiologic:	
Growth	Immunity and Resistance
Pregnancy	Absorption of Other Nutrients
Lactation	Appetite
Bone Formation	Hunger
Blood Formation	Fatigue
Pathologic:	
Convalescence	Edema
Wound Healing	Obesity
Diseases of Liver	Wasting Diseases
Diseases of Kidney	Impaired Gastrointestinal Absorption

It may be well to recall at this time the difference between the terms protein foods and protein. Protein foods are sources of protein, but they are also excellent sources of other important nutrients—minerals, vitamins of the B-complex, and frequently fat and fat soluble vitamins. In practical human nutrition, in nutritional studies on human subjects, and in clinical therapeutics, it is usually impossible to separate effectively these various nutrients furnished by protein foods. Hence it is difficult to interpret the results precisely. Thus a high protein diet usually results in an increase of other important nutrients and a low protein diet may be deficient in nutrients other than protein. It is obvious and imperative that if any significant decrease in the protein supply of an individual or of a nation is considered, an accurate evaluation of nutrients other than protein, but generally furnished by protein foods, be made.

How much protein does a healthy adult require? How much of this protein requirement must be supplied by animal protein as compared with vegetable protein? Does exercise increase the protein requirement? These are old questions that have brought forth warm discussion ever since the days of Rubner and Voit—and questions which are still under discussion. Today the protein nutrition of mammals is recognized as nutrition by essential amino acids, and research of the last two years has shown that man fits well into this concept. Thus Holt and coworkers at Johns Hopkins have shown that tryptophane, lysine, and methionine are required for the maintenance of nitrogen equilibrium in man and that arginine is essential for normal spermatogenesis. Rose at Illinois has recently maintained nitrogen equilibrium in young adults on a mixture of eight amino acids. Whipple at Rochester has found that a mixture of

* Presented by invitation before the Division of Agricultural and Food Chemistry, American Chemical Society, Pittsburgh, Pa., September 10, 1943.

pure amino acids is as effective in restoring plasma protein, and presumably therefore body protein, as such proteins as casein and beef serum. The answer to how much protein one requires is simply that amount of protein which provides an adequate quantity of essential amino acids. It makes little difference whether they are furnished by animal or vegetable protein. Data available at present, however, are too fragmentary to provide accurate information concerning either the amino acid composition of various protein foods or the quantity of essential amino acids required by man.

From the practical viewpoint, the protein requirement of man is definitely related to the amount of carbohydrate and fat in the diet. If there is sufficient energy yielding food available so that protein will not be used appreciably as a source of energy, then the protein requirement will be considerably less than if a significant amount of the protein is required for calories.

We should like to mention briefly a recent investigation * which gives considerable practical information on the questions of protein requirement, how much of this should be animal protein, and the effect of exercise on the protein requirement.

This was a study of dietary protein in relation to physical efficiency which was planned and conducted by R. E. Johnson, R. C. Darling, and W. H. Forbes of the Harvard Fatigue Laboratory with the coöperation of the Division of Nutrition of the Medical and Public Health Schools of Harvard University. The subjects were 24 volunteers from Civilian Public Service Camp 32, West Campton, N. H. They were all physically normal young men who continued their usual activities about the camp throughout the course of the experiments. The range of daily caloric expenditure, depending on the subject's job, was 2,400 to 5,000. Every attempt was made to interfere as little as possible with the normal daily routine of the subjects.

The men were divided into 3 groups of 8 men each. The normal control group subsisted on the camp diet, which by the standards of the Food and Nutrition Board of the National Research Council was good, and provided an average of 100 gm. of protein a day. The low protein group subsisted on a diet from which all meat, eggs, fish, nuts, legumes, cheese, and almost all milk were excluded. Their diet consisted essentially of cereal products, potatoes, other vegetables, fruit products, and oleomargarine, with not over 4 oz. of milk and cream a day. The high protein group was encouraged to replace low protein foods with foods rich in protein, such as meat, milk, cheese, eggs, nut products, especially peanut butter, and legumes. Following a 2 week period of observation when all of the subjects were on a normal diet, the experimental regime was followed for 2 months. Then for 2 weeks, the normal group continued on a normal diet, the high protein group reverted to normal, and the low protein group turned to high protein. No attempt was made to limit total caloric intake.

On each of the subjects the following observations were made: (1) a thorough medical examination during the normal period and at the end of the experimental period, (2) periodic estimation of red blood cells, white blood cells, hemoglobin, and differential count, (3) routine clinical examination of the urine, (4) medical interview once a week to ascertain if the subject was suffering from any complaint attributable to the

* The investigation referred to in this part of this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Harvard Fatigue Laboratory. The work will be reported in detail in a forthcoming paper by R. E. Johnson, *et al.*

diet, (5) weekly assessment of general physical fitness for hard work by the "pack test," which is a standardized exercise tolerance test designed by the Harvard Fatigue Laboratory, (6) weekly estimation of serum non-protein nitrogen, albumin, and globulin, (7) weekly estimation of nitrogen in a 24 hour specimen of urine, (8) meal by meal record of dietary intake (all food was either weighed or dispensed in standard portions and diet calculations were made daily. Standard food tables were used and the results obtained were frequently checked by direct analysis of food samples.), (9) a daily caloric expenditure in work was estimated from a continuous hour by hour diary kept by each subject.

The average daily protein intake of the low protein group was about 50 gm., of which not more than 5 gm. was in the form of animal protein. The 4 to 5 gm. of animal protein was furnished by milk used in some of the cooking and occasionally on breakfast cereals. The normal group averaged 100 gm. of protein intake, of which about 60 gm. was animal protein. The high protein group had an average daily protein intake of about 160 gm., mostly animal protein. No members of the low protein group, not even the hardest worker, who averaged about 5,500 calories expenditure on a working day, suffered measurable deterioration in physical vigor. The only symptom that could be attributed to the low protein diet was voiced by the two hardest workers, one a farmer and the other a man engaged in hard work in the woods. These men usually felt quite hungry about 11:00 a.m. and 4:00 p.m. Nevertheless, their day's work did not suffer from the low protein diet. No significant changes were found in serum albumin or globulin of the low protein group. In view of Chittenden's finding that a low protein diet is in fact beneficial to physical vigor and efficiency, it may be mentioned that the physical fitness of the subjects on the low protein diet was no better than that of the control or high protein groups. In the high protein group no measurable benefit to physical fitness from this large amount of protein could be observed in 2 months. No significant change was found in the serum albumin or globulin.

Thus, throughout a period of 2 months no measurable influence, either deleterious or beneficial, was seen in the physical vigor or efficiency in daily work of healthy young men subsisting on a diet providing 50 gm. of protein, of which not more than 5 gm. was animal protein. Likewise no beneficial or deleterious effect was observed in 2 months from a diet providing 160 gm. of protein, most of which was animal protein. One should emphasize that both of these diets were adequate with respect to calories and that a yeast concentrate was provided daily to the low protein group to insure an excess of vitamins of the B-complex.

It seems reasonable to conclude from this experiment that a daily protein intake of 50 gm., of which as little as 5 gm. consists of animal protein, is perfectly adequate for good health and efficiency providing, and this is a most important proviso, the diet is adequate in other respects, particularly calories and thiamine. In addition, confirmatory evidence is offered that exercise or hard manual labor does not increase the protein requirement. One might ask why a diet of less than 50 gm. was not used in the low protein group. The reason is that it is practically impossible to plan a reasonably palatable diet of ordinary foods which will supply 3,000 to 5,000 calories and yet not contain that amount of protein.

This experiment should not be interpreted as implying that protein requirements of the normal adult can safely be reduced to 50 gm. per day, of which only 10 per cent need be ani-

mal protein—not unless the diet is adequate in other respects. In dealing with the health of the public it is no doubt safer to rely on a protein level of at least 70 gm. per day for the average adult man and 60 gm. per day for the average adult woman as recommended by the Food and Nutrition Board.

Interesting data on dietary protein and signs of protein deficiency have recently been reported by Youmans.[1] Out of a group of approximately 1,100 individuals in Tennessee that were studied in considerable detail, there were some 40 per cent who had a dietary protein intake of less than 50 gm. daily. In these 450 individuals who had been receiving less than 50 gm. of protein per day, probably for most of their lives, only 5 subjects, or 0.9 per cent, had clinical evidence of protein deficiency. Furthermore, the caloric intake of these subjects was in general low, and it is entirely possible that with an adequate caloric intake no signs of protein deficiency would have occurred.

A nutrition problem of industrial importance, and one which is of medical interest, is the fatigue and weakness that is occasionally experienced about 3 hours after eating a meal high in carbohydrate. Efficiency experts have long recognized the desirability of supplying intermediate supplementary nourishment to maintain the performance of office and factory personnel throughout the working day. In clinical medicine it is well known that a pronounced fall in blood sugar, usually accompanied by excessive fatigue and weakness, frequently follows the ingestion of large amounts of relatively pure carbohydrate. Thus ingestion of a typical American breakfast—one relatively high in carbohydrate and low in protein and fat content—predisposes to mid-morning hypoglycemia with its consequent weakness and fatigue. Interesting experimental confirmation of this view has been obtained[2] by comparing isocaloric meals of varying composition. It was found that the ingestion of a breakfast high in carbohydrate was followed by symptoms of weakness, hunger, and fatigue in approximately 3 hours. An isocaloric breakfast high in fat was followed by similar symptoms but of lesser degree and after a longer time. An isocaloric breakfast high in protein was followed by an improved sense of well-being and no symptoms of hypoglycemia. The blood sugar levels following these three breakfasts corresponded closely to the clinical symptoms.

What are the effects of various diseases on the protein requirement? Are there diseases which result in a decreased protein requirement or in which a protein requirement below the recommended 1 gm. per kg. of body weight is desirable from the viewpoint of therapy? There are no diseases known which result in a decreased protein requirement.

In diseases which result in a marked increase in the non-protein nitrogen of the blood, such as certain phases of renal insufficiency, a low protein diet is desirable. However, nothing is gained by reducing protein intake below protein requirement, even in a patient with increased nitrogen in the blood, since any deficit in dietary protein will be made up by using body protein. Hence nitrogen end products to be excreted are not reduced, and in addition the body has suffered loss of tissue protein. In essential hypertension, or in renal disease in which the blood nonprotein nitrogen is not markedly elevated, a diet of normal protein content, that is 1 gm. of protein per kg. of body weight is not contraindicated.

What of high protein diets? Are they harmful to the normal individual? Are they frequently desirable in clinical medicine? They most certainly are not harmful to the normal indi-

vidual and they are quite desirable in many clinical conditions. It is possible here to mention only some of the more obvious examples. The Eskimo is noted for robust health, and the diet of the Eskimo is very high in protein and fat.[3] Explorers to the arctic and antarctic regions have occasionally existed for long periods of time on diets consisting almost entirely of protein and fat. This recalls the well known case of Stefansson who after many years of arctic exploration, during which time he lived on a high protein intake, lived in this country for one year on a diet consisting entirely of protein foods and fat. Prior to food rationing in this country it was common for many people to have a protein intake averaging 150 gm. per day, and to experience no harmful effects from such a high protein intake—in fact, such individuals are usually vigorous and robust.

In diseases characterized by loss of protein, such as nephrosis and the early stages of nephritis, or in cases of hypoproteinemia, naturally a high protein diet is very desirable. High protein diets are also of definite value in muscle wasting diseases. In fact, because protein foods carry with them abundant amounts of essential nutrients in addition to protein, their use in generous amounts in most diseases, particularly in convalescence, is to be recommended.

Recent investigations have indicated that dietary protein favors the absorption of calcium, of riboflavin, and of niacin. Lehmann and Pollak [4] found that the carbonates and phosphates of calcium were considerably more soluble in solutions of amino acids than in pure water. McCance, Widdowson, and Lehmann [5] using human subjects studied the effect of low and high protein diets, controlled experimentally by equal caloric rations of carbohydrate and fat, on calcium absorption. With a calcium intake of 630 mg. per day, a protein intake of 100 to 130 gm. resulted in the absorption of 94 mg. of calcium, whereas on the lower protein intake of 45 to 70 gm. per day only 32 mg. of calcium were absorbed. Thus calcium absorption was about three times as great on the higher protein intake. This observation fits in well with the fact that lean meat has a definite antirachitic effect and that skim milk decreases the vitamin D requirement.

It should be pointed out that generally in thinking of bone growth and nutrition one is apt to think principally of calcium, phosphorus, and vitamin D, and it should be recalled that bones have an extensive protein matrix. This protein matrix is equally necessary for proper bone formation, maintenance, and repair. It is a common clinical observation to find adults who have a low calcium intake and yet have no demonstrable findings of calcium deficiency, though frequently such individuals have a high intake of protein. In spite of a low calcium but high protein diet, the Eskimo possesses excellent teeth and bones. Thus there is evidence that a good level of protein in the diet may convert an otherwise poor calcium diet into one supplying sufficient amounts of this mineral.

There is considerable evidence that a relationship between protein metabolism and the vitamin B-complex exists. Recent additions to the experimental evidence supporting this relationship are the findings of Perlzweig and coworkers [6] that in rats and dogs, high protein diets favor retention of riboflavin and of niacin as judged by urinary excretion studies and also by actual tissue analyses for these vitamins in animals on low and high protein diets. As far as we know, investigations on human subjects with regard to absorption or retention of riboflavin or niacin have not been done, but it is

possible that, as in the case of calcium, a diet high in protein may favor retention of riboflavin and of niacin, and hence assist in securing adequate amounts of these nutrients from a dietary regime in which, in other circumstances, the amounts of these vitamins would have been suboptimum.

Have present wartime food conditions in this country posed special problems with respect to protein foods and the *health* of the people? It is our belief that the answer to this question is definitely no. True, certain protein foods are rationed and others may be rationed, but as long as this country has access to a plentiful supply of calories, and a variety of whole grain cereals and legumes, it is most unlikely that ***impairment of health*** from protein deficiency will ever occur. But there are very definite economic problems, as evidenced recently by the plentiful amount of livestock on the western ranges and the amounts of meat available at consumers' markets. And there are definite psychological problems of convincing a population used to eating a high protein diet that one of much lower protein content, and low in animal protein, will not necessarily impair health. Lumberjacks may demand plenty of red meat to get timber cut, but that demand rests on habit and not on a nutritional or medical basis.

Post-war feeding operations in war-torn countries will demand large amounts of protein foods until the agricultural economy of those lands can be restored to such a level that they can contribute effectively to their own nutritional support. But there are protein foods that could be made available in this and other countries; protein foods which are stable and of which stock piles could be created for the time when they are needed in large amounts; protein foods which are superior not only in protein but in other essential nutrients. We refer specifically to wheat germ, corn germ, yeasts, dried legumes, and the various products which can be made from peanuts and soybeans. There is sufficient experimental evidence in animal nutrition that the vegetable proteins we have mentioned are high quality proteins. They have an excellent supplementing quality among themselves and when used with the more common vegetable proteins—and man does not live exclusively off of any one or two proteins. We do know that when properly prepared these superior vegetable proteins are well digested by human beings. True, their adequacy for human nutrition is in most cases not well known, but let us not reject them because of this. It seems to us that all too frequently there is far too much of a lag between research findings in animal nutrition and their application to human health. On the other hand, it is equally unfortunate, in the absence of experimental data, to proclaim that any of these lesser used protein foods are definitely superior in human nutrition to the more common protein foods on which we have considerable data.

SUMMARY AND CONCLUSION

1. The protein requirement of man cannot in the present state of knowledge be quantitatively stated in terms of amino acids, under certain standardized conditions.

2. Calorie intake from carbohydrate and fat spares protein, and in the presence of sufficient calories from non-protein sources, the amount of protein in the ordinary diet of an active adult may be safely reduced to 50 gm. per day, of which as little as 5 gm. may be in the form of animal protein. The experimental evidence supporting this latter statement is limited to an 8 week observation period; however, there is no reason to suspect that it would not hold for much longer periods. The recent findings of Youmans support this view.

3. The protein requirement is not increased in exercise, and physical fitness and efficiency are not impaired or improved on low protein diets adequate in other nutrients.

4. Substituting protein for some of the carbohydrate in the common American breakfast is a feasible way to prevent mid-morning symptoms of fatigue.

5. High protein diets are not harmful to the normal adult and are of definite therapeutic value in many diseases and particularly in convalescence.

6. Certain less common protein foods exist which are of high nutritional value, and which could be used with considerable value in post-war feeding operations.

7. We should not forget that protein foods are excellent sources of nutrients other than protein, and we cannot reduce the protein of a diet unless at the same time we provide the other essential factors contributed by protein foods.

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Studies on Epidemic Diarrhea of the New-born: Isolation of a Filtrable Agent Causing Diarrhea in Calves*

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DURING the past two years we have had the opportunity of studying six separate epidemics of diarrhea of the new-born occurring in three hospitals in the Baltimore-Washington area. This study has been approached from the standpoint of a possible filtrable agent etiology of the disease.

The first two epidemics occurred almost simultaneously at two Baltimore hospitals in the early fall of 1941. Stools, blood, and nasal washings were obtained from a number of the babies and injected by various routes into a variety of the smaller animals. No definite disease resulted in any of the animals.

The subsequent four epidemics occurred during 1942, two of them in the full-term nursery of a Baltimore hospital and two in the premature nursery of a Washington hospital. All four were characterized by a high morbidity rate; in the last three of these epidemics the mortality was high, while in the first, occurring among full-term babies during the month of March, the mortality was low. Stool cultures were uniformly negative for known diarrhea-producing organisms. In each of the four epidemics, stool of affected babies was given nasally to a calf. This material was Seitz filtered in three of the instances, unfiltered in the fourth. In all four instances there followed in the calf a bloody, mucoid diarrhea with comparable incubation period and clinical characteristics.

On the first occasion in which this result was obtained in the calf, the question arose as to whether attempt at further serial calf-to-calf passage would be worth while. The calf, like the human infant, is naturally prone to diarrheal episodes from a variety of causes, and the mere occurrence of diarrhea following injection in a calf would not necessarily signify that successful passage had been carried out. However, in view of the presence of blood and mucus in the stools of this first calf, it was hoped that if there were an agent here which could be passaged, the clinical picture in the calf might be distinctive enough to provide fairly reasonable assurance of successful passage. This hope has apparently been realized; successive calf passages were found readily possible with each of the four strains and the results of cross-immunity studies have indicated that the four strains represent a single agent.

* Presented at a Joint Session of the Epidemiology, Health Officers, Maternal and Child Health, and Laboratory Sections of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 14, 1943.

Up to the present time this disease has been produced in a total of 84 calves. In the case of the first strain there have so far been carried out 29 successive passages, 10 of which were with filtered material; with the second strain 4 successive passages, 2 of them filtered; with the third strain 8 successive passages, 6 filtered; and with the fourth strain 2 passages, both filtered.

The majority of the calves used have been of the Guernsey breed, and these were found quite satisfactory. In Holstein calves the disease did not seem quite so typical and one Holstein calf was apparently not susceptible. Aside from this single animal, the calves used were found uniformly susceptible. Ages of the animals ranged from 2 days to 2 months. Most of them were in the 1 to 3 week age period, and in calves older than this the clinical disease tended to be milder.

Passage material consisted of saline suspension of infected calf stools obtained during the acute stage of the disease. The material was frozen when obtained and stored in a dry ice container until ready for use, then thawed at 37° C. and given by simple nasal injection. The minimum dose uniformly successful in passage was 1.0 ml. With Seitz filtrate preparations of this material a larger dose was necessary, the smallest successful dose ever used being 8.0 ml. Material given nasally to the unanesthetized calf is swallowed and it may be that the portal of entry for the agent is actually within the gastrointestinal tract, as the one attempt made at passage through the use of a stomach tube was successfully accomplished.

The clinical disease in these calf-to-calf passages was quite similar to that which followed the injection of material from the babies in the four epidemics mentioned above. The incubation period regularly ranged from 2 to 5 days. The disease itself, though exhibiting a certain amount of variability, was uniformly characterized by the occurrence of diarrhea with the production of mucus, usually in very large amounts. Almost every calf also showed blood in the stools at some time during the course of the disease. As a rule, constitutional reaction was minimal, and aside from mild dehydration and anorexia at the height of the process, the calves would usually not seem particularly ill. Temperatures were taken on a few of the calves and very little fever was found.

The disease proved to be of a peculiarly relapsing nature in the calf, and in rare animals the mucoid diarrhea actually became chronic. In those calves which survived, the total duration of the process varied from 8 to 54 days; in the average case the duration was in the neighborhood of 3 weeks. Most of the animals recovered, the mortality being about 13 per cent. Immunity was found to be present following recovery, large doses of active material then causing no disease.

On gross pathological examination both small and large intestine showed hyperemia, while the intestinal lymphoid tissue was swollen and the mesenteric lymph nodes appeared enlarged. Microscopically, there were found areas of infiltration of the intestinal wall with polymorphonuclear leukocytes and in one very severe case ulcerations of the mucosa, while the intestinal lymphoid tissue and the mesenteric lymph nodes appeared hyper-plastic.

Three attempts were made at passage with the use of the blood of infected calves. The first attempt failed. The other two, made with blood taken from exceptionally sick calves during the latter part of the first week of the disease, were successful, and it is interesting that one of the calves that came down from this material had been inoculated by the subcutaneous rather than the nasal route.

Susceptible calves exposed to infected calves were found to acquire the disease by cross-infection. In a few of the instances the disease thus acquired was clinically very mild, with relatively prolonged incubation period, but in most of the cases the picture produced was quite typical.

In view of the fact that cross-infections could occur, it was obviously necessary to enforce strict isolation of animals used in this study. This was accomplished by isolating calves singly in a number of widely separated areas such as farms where there were no other calves present.

In a consideration of the probable nature of the agent discussed in this paper, one of the first questions that comes up refers to the possibility that it is present in normal infant or calf stools. In this connection, the stools of 4 normal calves were given nasally in large dose respectively to 4 different calves. No disease resulted in these animals. The stools of 8 normal newborn infants were similarly tested, a pool of stools from 2 separate babies being given to each of 4 calves. Again no disease resulted.

As to the properties of the agent, it was found to be readily filtrable through Seitz filters, and cultures of filtrates on various aerobic and anaerobic media have been uniformly negative. The longest series of successive Seitz filtrate passages that was attempted was 4, and this was successfully completed, each calf in the series receiving Seitz filtrate of the stools of the calf that preceded him in the series. In view of the fact that the agent was not found in the stools of normal calves, this would seem to indicate that it is self-perpetuating.

Activity is maintained for at least 2 months when the material is frozen at −70° C. and stored in dry ice. Material which has been dried from the frozen state seems to undergo attenuation, and when used in passage results in the production of a very mild disease of short duration, with prolonged incubation period. This very mild disease produces immunity, as a subsequent inoculation with fully active material results in no observable disease. When the stools from this very mild disease are further passaged, 2 serial passages result in the reëstablishment of full virulence.

Heat inactivation experiments, carried out by the submerged sealed tubes method, are as yet incomplete. The data so far available seem to indicate that the agent is not regularly inactivated by boiling for 5 minutes, but is regularly inactivated by boiling for 10 minutes. Heating at 70° C. for 1 hour apparently fails to inactivate the agent, but heating at 80° C. for 1 hour results either in complete inactivation or in attenuation.

Protection tests were carried out with the use of the sera of 6 babies recovered from the epidemic in connection with which the first strain of the agent was obtained. The data on these tests would require discussion too lengthy for the present occasion, but, in brief, it appeared that two of the sera showed complete protection, two showed probable protection, and two showed partial protection. In this connection, with reference to the antigenicity of the agent, a rabbit was given repeated small intravenous injections of Seitz filtrate of infected calf stool. Following this his serum showed protective antibodies. This experiment was controlled by the use of serum from a non-injected litter mate.

The question arises as to whether this disease occurs naturally among calves. The opportunity came up to study two herds of dairy cattle more or less chronically infected with calf scours. In one of these herds a calf was found whose clinical picture was quite similar to that of the calves infected with the agent described above.

The studies which were carried out, however, indicated that the cause of his disease was not this same agent, and at the present time it is impossible to say whether or not this disease occurs naturally among calves.

In this connection, another question comes up which refers to the possibility that this agent might actually be identical with the pneumoenteritis virus, isolated by Baker [1] from a natural disease of calves characterized clinically by pneumonia and diarrhea. Though samples of this virus were not available for experimental comparison, it seems unlikely on the basis of the evidence at hand that the two agents are the same, first because of the absence of pneumonia in the calves affected by the agent discussed in this paper, and second because of failure with it of transmission to mice even after a number of serial mouse passages.

The conclusions which seem justified from the data presented are:

1. In connection with four separate epidemics of diarrhea of the new-born a filtrable agent has been isolated which regularly produces diarrhea in calves.
2. In the attempts so far made, this agent has not been isolated from the stools of normal infants or normal calves.
3. The evidence suggests, though it is not conclusive, that the agent may be a cause of epidemic diarrhea of the new-born.

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Streptococcal Infections in a Naval Training Station*

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WHENEVER an epidemic of streptococcal infection strikes a civilian population group, it is practically always caused by some single strain of streptococcus of high disseminating ability, either one already present which has recently increased its distributing powers or one newly introduced into the community from without. Endemic infections, on the other hand, are usually due to a number of different types of low disseminating ability which are part of the streptococcal flora of the community.

Since civilian communities are relatively static in composition, the changes in the streptococcal flora take place slowly. Outbreaks are infrequent and usually limited to the immediate population group. During wartime mobilization and training of troops, however, the conditions are entirely different. Men from diverse communities are collected into camps and stations; the opportunity for importation of some highly active strain or strains is therefore great. Futhermore, the men are housed by groups in barracks and congregated in mess-halls and drill sheds so that the chance of dissemination of any strain of streptococcus is multiplied.

For this reason, we have undertaken a study of streptococcal infections in a naval training station for the purpose of gaining a better understanding of the epidemiological principles involved under these conditions and with the hope that some control measures might be developed.

At the naval training station raw recruits were formed into companies of approximately 125 men for a period of 10 to 12 weeks' training. Two such companies were housed in each barracks, one to a floor. Although each company was trained largely as an individual unit, there was frequent opportunity for contact between companies in mess-halls, drill sheds, and at recreational gatherings.

A representative company in its third week of training was chosen for the study which began on April 2 and terminated on May 7, 1943. A special history form was prepared for each man and all pertinent data were entered as collected. Throat cultures for streptococci were taken from each man on the first day of the study and twice a week thereafter. Sick call was held at 8 a.m. every day and any illness noted. Where

* Presented before the Epidemiology Section of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 12, 1943.

TABLE 1

The Streptococcal Illnesses Which Occurred in the Study Company and the Types of Streptococci Responsible

Illness	Causative Type of Streptococcus						Number of Cases
	1	3	6	12	19	39	
Scarlet fever	..	2	..	..	..	..	2
Tonsillitis	8*	2*	10	1	1	1	23
Pharyngitis	..	..	8†	2	2†	..	12
Pharyngitis-laryngitis	1	..	..	..	..	..	1
Laryngitis	..	..	2	..	..	..	2
Peritonsillar abscess	..	..	1	..	1	..	2
Total	9	4	21	3	4	1	42

* Same man had two attacks of tonsillitis due to two different types.
† Same man had two attacks of pharyngitis due to two different types.

examination showed a respiratory infection, a throat culture was taken. All streptococci recovered, whether from the regular surveys or from cases of illness, were grouped, and if group A were typed by Lancefield's methods. A Dick test was done on each man at the beginning and end of the study period.

During the period of the study, 42 cases of streptococcal infection developed in the company. This actually represented 40 men, since 2 men each had two infections at different times. The incidence of streptococcal disease among the total 131 men in the company was therefore 32 per cent. This figure is high, but it includes all cases of streptococcal infection which occurred, no matter how mild. Actually, only 14 of the 42 cases were of sufficient severity to require bed care. Nevertheless, the fact is demonstrated that streptococcal infections may be much more widely spread than usual morbidity figures indicate.

In Table 1 are shown the various kinds of streptococcal illnesses which developed and the streptococcal types involved. Six different types were responsible for sickness in the study company, but of these types 6 and 1 were outstanding. Together they accounted for 30 of the 42 cases of infection. The remarkable point is that,

TABLE 2

Comparison of the Types of Streptococci Found Among Cases of Illness and Normal Carriers in the Study Company, Normal Carriers in Other Companies and Cases of Scarlet Fever

Type of Streptococci	Percentage Distribution of Types among Streptococci Recovered from			
	Cases of Streptococcal Illness in Study Company	Normal Carriers in Study Company	Normal Carriers in 6 Other Companies	Cases of Scarlet Fever on Station
1	21	24	20	5
3	10	9	3	55
5	..	0.5	..	..
6	50	46	33	..
11	..	0.1	..	..
12	7	7	8	3
14	..	..	2	..
19	10	7	17	37
25	..	1	..	..
28	..	0.5	..	..
32	..	0.1	..	..
39	2	1	7	..
Not Typable	..	3	4	..
Total No. Strains	42	637	428	38

No strains of types not included in table were isolated.

despite the large number of other streptococcal infections due to these two types, they caused no scarlet fever. The two cases of scarlet fever which did occur in the company were both due to type 3 streptococcus. This suggests that types 1 and 6, although highly pathogenic, may have only slight if any ability to produce scarlet fever.

More evidence on this point is available in Table 2, in which is given the percentage distribution of the different types among streptococci recovered from various sources on the station. The first point of interest in this table is that the percentage distribution of the various types of streptococci in the study company is the same among cases of illness and normal carriers. This confirms an observation we have previously made[1] in a study in an army camp that the incidence of disease due to a given type is proportional to its distribution among normal carriers. Furthermore, the distribution of the various types among normal carriers in six other companies on the station was practically the same as in the study company, so that the latter may be considered representative of conditions on the station as a whole. In all of the companies types 6 and 1 predominated. Nevertheless, among cases of scarlet fever occurring on the station, types 3 and 19 were outstanding. No cases of scarlet fever due to type 6 were discovered, and only two were caused by type 1. This is evidence that types 6 and 1 had negligible power to produce scarlet fever.

It seems, therefore, that the streptococci present on the station could be divided into two major kinds:

1. Types which were highly pathogenic but which had little scarlatinogenic ability, like types 1, 6, and 12.
2. Types which were pathogenic and scarlatinogenic, like types 3 and 19.

No reason has yet been discovered why some strains are scarlatinogenic and others not. Julia M. Coffey of the Division of Laboratories and Research of the New York State Department of Health was kind enough to determine the toxigenic abilities of the four major strains encountered. Types 19 and 6, one scarlatinogenic and the other non-scarlatinal, each produced toxins of high potency, approximately 90,000 S.T.D. per ml. On the other hand, types 3 and 1, the former scarlatinogenic and the latter not, yielded toxins of only low titer, approximately 100 and 1,000 S.T.D. per ml, respectively. Even admitting that a laboratory test may not give a true indication of the ability of a strain to produce toxin under natural conditions, the fact remains that type 6, which produced no scarlet fever, possessed the ability to produce toxin of extremely high potency. It appears, therefore, that toxigenic ability alone does not determine the difference between a scarlatinal and a non-scarlatinal strain of streptococcus. This problem will need considerably more work before it is clarified.

During the period of the study throat cultures were taken on all normal persons in the study company at semi-weekly intervals. The carrier rates for the various types of streptococci recovered have been charted in Figure 1. Type 6 was the predominate strain; from 16 to 33 per cent of the men were carriers of this type. The second most common strain, type 1, showed carrier rates between 7 and 18 per cent. The three other outstanding types, 3, 19 and 12, averaged 5, 4 and 4 per cent respectively. When all types are considered the carrier rates ran as high as 69 per cent.

The striking point in these observations is the high carrier rates. Ordinarily in normal civilian populations the rates are not over 10 per cent, and even during epidemic times rarely exceed 40 per cent. But in this case, as high as 69 of every 100 individuals were carriers of streptococci and 66

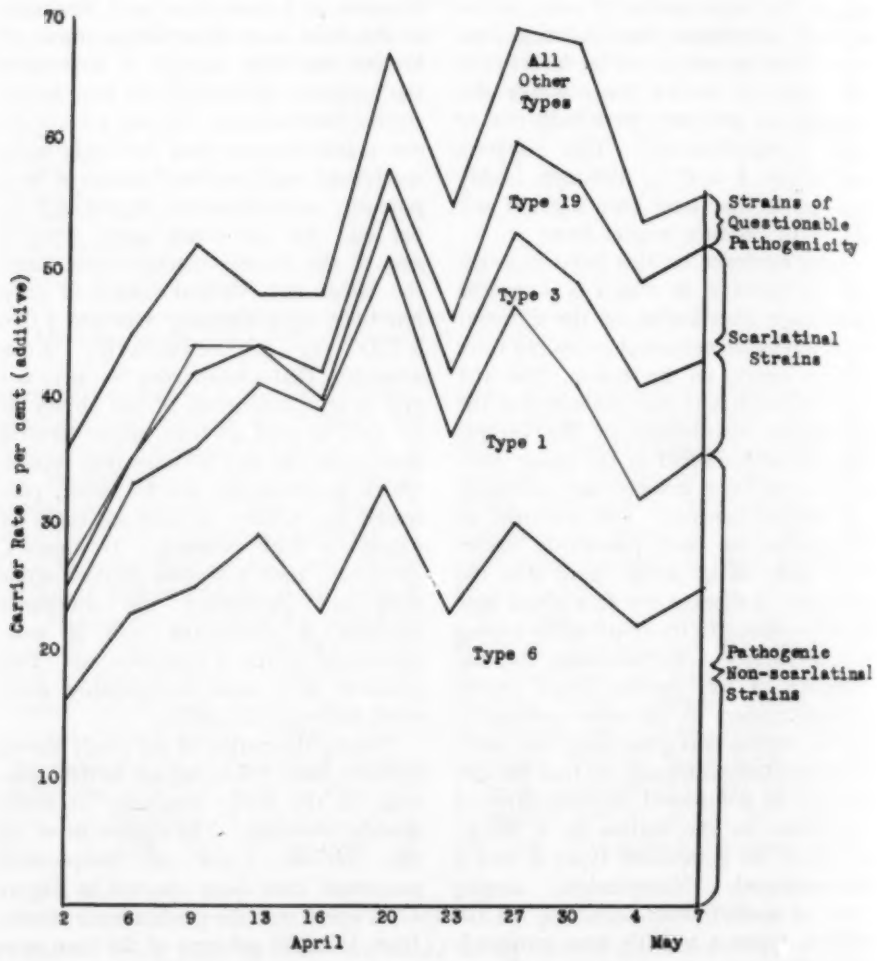


FIG. 1. THE COMPOSITION OF STREPTOCOCCAL CARRIER RATES IN THE STUDY COMPANY DURING THE PERIOD OF STUDY.

of these harbored strains of known pathogenicity.

These high carrier rates account for the high incidence of streptococcal infections in the study company. As previously mentioned, we have demonstrated in an earlier study[1] that during an epidemic of scarlet fever due to a single type the case incidence in various companies was proportional to the carrier rates for the type of streptococcus causing the outbreak. In the present study, however, we have an outbreak due to a number of different types. If we plot the average carrier rate for each type during the study period against the case incidence of illness due to the respective type we find the relationship to be a straight line (Figure 2). This means that where more than one type of streptococcus is active during an outbreak, the number

of cases of infection due to each is proportional to the carrier rate for the respective type.

These high carrier rates apparently developed among the men during their course of training, since only 4 per cent of incoming inductees were found to harbor beta hemolytic streptococci.

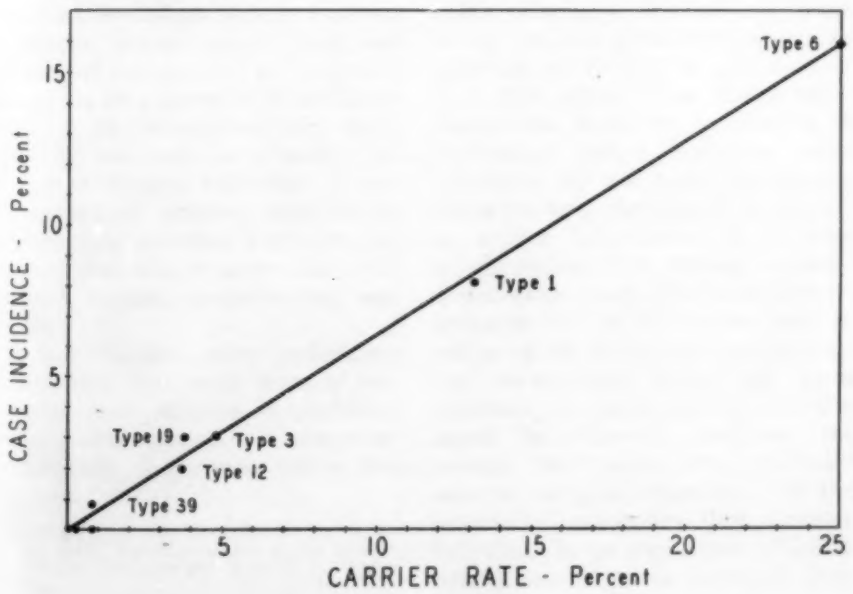
The next phase of the study concerns the experiences of the individual men with the streptococci. Eighteen of the 131 men in the study company were never reached by the streptococcus, and therefore naturally developed no illness. From 113 men, streptococci were recovered by throat culture; in many instances two, three, and even five types were found in the same man during the study period. And yet only 40 men developed streptococcal illnesses. What protected the other 73 men definitely known to have streptococci in their throats from becoming sick? Time will not permit a full analysis of the observations on this point. They will be made the subject of another report. The following are, however, the important points:

1. Seventy-three men developed no illness even though as many as five different types of streptococci of known pathogenicity were recovered from their throats.
2. The Dick reaction apparently played no rôle in this resistance, since the amount of illness among Dick negative men was proportionately the same as among those Dick positive.
3. Some individuals resisted infection with one type of streptococcus but became ill when seeded with another type.
4. Several persons developed two illnesses due to two different types of streptococci.
5. No person became ill twice from the same type organism.

All of these observations point toward a conclusion that resistance to streptococcal infections is due, at least in part, to some form of type-specific immunity.

These studies have, therefore, pointed out two possible avenues of approach to the problem of preventing streptococcal infections at naval stations. First,

FIG. 2. The relationship between the percentage distribution of various types of streptococci among normal carriers and among cases of illness. Each dot represents a type of streptococcus



since the number of cases of illness is proportional to the distribution of streptococci among the men, steps aimed at preventing or inhibiting the dissemination of organisms should lower the number of infections. Studies in this direction are under way but as yet incomplete.

Second, since resistance to infection seems to be type-specific, it may be possible to develop a type-specific immunity to those types which are active on the station. Studies are therefore being made on the development of efficient type-specific vaccines. The method would not be applicable for universal use, but at stations where only a few types are responsible for the streptococcal illnesses, a pooled vaccine of these types, given to all incoming recruits, may prevent the bulk of the streptococcal disease. Our work in this direction is so far encouraging but awaits the test of trial during the coming winter.

And finally prophylaxis with sulfonamides should not be everlooked. Our previous report[2] on this subject has demonstrated that streptococcal epidemics may be controlled by the administration of small doses of sulfonamides, and that the resultant drop in case rate holds for at least 3 weeks following discontinuance of the drug.

The prevention of streptococcal infections in the armed forces may not, at first glance, seem important except in those instances where a definite epidemic occurs. They are, however, constantly present, especially during the winter months, and although not reflected in the usual morbidity figures because of their general mildness, they account for a very appreciable figure in man-days lost.

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NOTE: This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

Laboratory Methods Used in Determining the Value of Sulfadiazine as a Mass Prophylactic Against Meningococcic Infections*

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THE purpose of this paper is to outline the laboratory methods used in evaluating the efficiency of the mass use of sulfadiazine as a prophylactic against meningococcic infections and to describe the laboratory studies that should be made before such treatment is instituted. As is generally known, meningococcic infections presented a considerable problem during the past winter in the various newly assembled Army camps in the southeastern United States. The control measures that have been used heretofore, such as isolation of patients, quarantining of units, and culturing of contacts had no noticeable effect upon the prevention of additional cases. It was shown that only rarely would the new cases occur among the contacts of diseased individuals. Sample surveys of military units where meningococcic infections were occurring indicated that a high carrier rate, with Group I carriers predominating, was present.

It was decided, after preliminary trials proved that small doses of sulfadiazine were effective in sterilizing meningococcus carriers,[1] to determine the efficiency of the mass use of this drug for controlling meningococcic infection by the total elimination of carriers. A preliminary report concerning these studies has been rendered elsewhere.[2] This showed that the administration of small doses of sulfadiazine to an entire population *at one and the same time*, is the most effective means available for controlling meningococcic outbreaks in closed populations. The carrier rate is precipitously dropped to near-zero and this is immediately reflected in the case rates.

But who shall receive such treatment? As was mentioned before, the culturing and treating of case contacts is of little value. Even though sulfadiazine was found to be effective in eliminating carriers from an entire population by the mass prophylactic use of the drug, the measure should not be applied indiscriminately to large groups without first making a careful epidemiologic study. This should include determinations of the carrier rate, as well as of the serological types present. Our studies have shown that when epidemics of meningococcic infection occur, the following conditions are present: high carrier rates, predominance of Group I organisms, and the presence of non-immune (new recruits) individuals in the population. Table 1 summarizes the data collected from

* Presented before the Laboratory Section of the American Public Health Association at the Seventy-second Annual Meeting in New York, N. Y., October 12, 1943.

TABLE 1

Incidence and Types of Carriers in Relation to Susceptibles and the Occurrence of Cases

Camp	Carriers Per cent	Groups (Per cent of Carriers) I	II	IIa	P–V *	Cases	New Recruits
A	37.0	56.8	5.4	1.4	36.4	Epidemic	Yes
B	55.8	62.2	7.5	7.3	23.0	Sporadic	No
C	7.9	11.2	7.4	18.6	62.8	No cases	No

* Polyvalent meningococci

several camps and demonstrates the above conditions. Such data give one economic as well as epidemiologic justification for the treatment.

The description of the methods evolved from these studies forms the basis of this report. These methods have now been employed in 4,737 carrier and case cultures obtained during the past 9 months. Of this total, 1,692 were positive for meningococci (Table 2). Of the positive cultures, 800 were obtained from the blood and spinal fluids of actual cases of meningococcic infection. These were examined by the methods to be described, and form the basis for our acceptance of their worth. In no instance have we encountered an organism, actually isolated from a patient, which failed to type serologically or to yield the typical fermentation reactions. These results are a reflection of the vastly improved media (dehydrated) and typing sera available today. Although these procedures are relatively easy to apply, good results can only be obtained by well trained personnel. One should take every opportunity to increase his efficiency by practising with known meningococcus cultures which have been mixed with ordinary throat cultures.

At this point it might be pertinent to define what we have called a meningococcus: a Gram-negative diplococcus which ferments dextrose and maltose but not sucrose, and which is agglutinated by polyvalent horse, anti-meningococcus serum but not normal horse serum or saline. Agglutination by monovalent rabbit serum is desirable but not necessary except for the requirements of specific type identification. We have encountered organisms in carriers but not in active cases which fulfil all of these criteria, except that they are agglutinated only by the polyvalent horse serum and not by monovalent rabbit (or chicken) sera. We call such organisms "polyvalent meningococci," and believe them to be deficient in capsular substance as might be expected in carriers.

Further, these organisms should not

TABLE 2

Summary of Positive Meningococcus Cultures Examined During a 9 Month Period at the Fourth Service Command Laboratory

Source	Positive Cultures	Serological Groups I	II	IIa	P–V *	Fermentation Reactions
Spinal fluid	579	559	4	16	0	Typical
Blood	221	200	10	11	0	Typical
Nasopharynx †	892	456	90	72	274	Typical
Totals	1,692	1,215	104	99	274	

* Polyvalent meningococci
† Carrier Surveys predominately

grow at room temperature but should require rather fastidious growth conditions such as enriched media and the diminished oxygen tension of the candle jar. We routinely include para-aminobenzoic acid in 5 mg. per cent concentration in all of our primary isolation media as a safeguard against sulfonamide treated patients.

METHODS

1. *Culture media:*

a. *Chocolate Agar:* This is a mixture of dehydrated hemoglobin (Difco) and Proteose No. 3 Agar (Difco) made according to the instructions of the manufacturer[3] except for the addition of 50 mg. of para-aminobenzoic acid per liter. These plates should be incubated for 24 hours following their pouring, and those with contaminating colonies discarded. The plates should be moist but not wet. If too moist, difficulties with contaminants such as proteus may be pronounced. They should be warm when inoculated; following this, they are transferred to candle jars and incubated at 37.5°C. Chilling must be prevented. Many of our surveys were done under field conditions but the plates were kept warm by wrapping with blankets.

b. *Fermentation Medium:* The medium to be described has been found extremely effective for both meningococci and gonococci. Reactions may usually be read in 12 hours or less for the former, while the latter may require 48 hours. Spinal fluids may be inoculated directly into this medium. Because of its agar content, the oxygen content is kept low enough so that incubation in the candle jar is usually unnecessary. We employ three sugars routinely: dextrose, maltose, and sucrose. An occasional meningococcus will ferment dextrose or maltose slowly but all have eventually fermented both. Sucrose fermentation has not been encountered in our series.

Formula

Bacto-tryptose	20 gm.
NaCl	5 gm.
Agar	1 gm.
Phenol red	0.4 ml. (0.2% stock solution)
Distilled H_2O to	1,000 ml.

Adjust to pH 7.4.

Add 5 gm. of dextrose or maltose or sucrose to 1 liter of medium. Sterilize for not more than 10 minutes at 10 lb. of pressure.

The consistency of the fermentation reactions obtained with this medium clearly establishes them as valuable adjuncts for the final identification of Neisseria.

c. *Serological Typing:* Quellung[4] reactions are not feasible in carrier surveys. The spot-plate method to be described is rapid, accurate, and economical. It was run in parallel with the macroscopic tube agglutination for several hundred specimens and no discrepancies were encountered. We have used it for both our case and carrier cultures.

Serum: Typing and control sera diluted 1:10 with normal saline are employed.

Suspension: The surface of a plate containing a pure growth (by Gram-stain) of the organism to be tested is wiped with a cotton swab. This is then plunged into a small tube containing about 0.5 ml. to 1 ml. of normal saline, and twirled until a smooth, fairly dense suspension of organisms results.

Test: Several circles are marked with a china pencil on a large glass slide. One drop of each of the sera is placed in its circle. A drop of the suspension is added, and complete mixing is accomplished by stirring with a toothpick. The slide is then rotated gently for 15-30 seconds. Agglutination is read macroscopically, preferably by indirect illumination against a dark background. Final readings should be made before there is any sign of drying. Agglutination is readily observed when present.

If an organism agglutinates in all the sera, then, providing that a pure culture

has been used, it is probably not a meningococcus. However, an occasional meningococcus may be "serum-sensitive." These should be replated and retested the following day. Contaminated cultures which give improper agglutinations may be purified in this way. By that time, also, the fermentation reactions will have been completed and further indication of its identity will have been obtained.

Approximately three hundred organisms were typed in duplicate by the spot-plate method with both rabbit and chicken [5] sera.* In no instance was any disagreement noted between the two. Those organisms which were agglutinated by polyvalent horse serum but not monovalent rabbit serum were also not agglutinated by chicken serum. It is our belief that the rabbit and chicken sera may be used interchangeably.

d. *Routine for Carrier Surveys:* A curved wire swab, which has been slightly moistened with a few drops of broth, is passed up and behind the uvula and the posterior nasopharynx is wiped gently. This swab is then removed without touching the tonsils or the buccal linings, and is streaked across one-eighth the surface of a chocolate-agar plate. The wire swab is discarded. Using a fresh sterile, wooden swab or a platinum needle the remainder of the plate is streaked from one contact with the original streak. The plate is then transferred to a candle jar and incubated for 18-24 hours.

Following this period of incubation, the plate is removed and searched for suspicious colonies. These will ordinarily be seen in the secondarily-streaked area as moderate-sized colonies somewhat opaque, moist, soft, and easily emulsifiable. They may be completely clear. Three or four suspicious colonies are picked to a "pie-plate" (another chocolate plate which has been divided into four or eight parts). This increases the chances of finding multiple types in a single carrier. We have isolated two types from one carrier on several occasions. It cannot be emphasized too strongly that the examiner should practice such isolations with known cultures on every possible occasion. One can easily double the percentage of his positive findings as the result of practice. The "pie-plates" are placed in the candle jar and incubated at 37.5°C. for 24 hours; at the end of this time they are removed and examined for purity. If they are pure cultures of Gram-negative diplococci, they are inoculated into sugars, and also agglutinated by the method previously described. The sugars will usually be completed within 12 hours. An occasional organism will ferment either dextrose or maltose slowly, and these may require slightly longer incubation.

It must be borne in mind that the meningococcus grows very profusely on this medium and produces colonies of fairly large size. This is sharply contrasted with the gonococcus which grows much slower and produces colonies which are much finer.

Some carriers will present what looks like pure cultures of meningococci, but one must guard against the tiny, Hemophilus colonies which may unnoticeably be transferred with the Neisseria.

We have not employed the oxidase[6] reagent on a wide scale since it was felt that with experience one could pick suspicious colonies with considerable accuracy, and therefore it was not necessary to use this reaction.

Utilizing the methods described, one may do fairly large scale studies on an accurate basis without too much difficulty. If one desires, the fermentation reactions can be omitted and final identification can be made on the basis of serological reactions. However, fermentation reactions should be deter-

* Supplied through the courtesy of Dr. W. V. Verwey of Sharpe and Dohme, Inc.

mined whenever there is any doubt concerning a given culture.

In closing, we would like to stress again that, before chemo-prophylaxis is employed on a large scale for a given group, a survey along the lines indicated in this paper should be made if proper laboratory facilities are available. The fact that one or two cases occur in a certain group is by itself, insufficient ground for wholesale distribution of sulfadiazine. A proper survey will help to indicate the probability of future cases and, therefore, the necessity for chemo-prophylaxis.

CONCLUSIONS

1. A routine which employs dehydrated media, a simple candle jar, and a rapid serological technic has been described for facilitating studies for meningococcus carriers.

2. The relationship of meningococcus carrier surveys to the mass treatment of such carriers with sulfadiazine as a method for controlling epidemics of this disease has been stressed.

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ACKNOWLEDGMENTS

It is desired to express appreciation for advice and technical assistance to: Captain C. T. Nelson, M.C., Captain L. R. Kuhn, Sn.C., Captain N. C. Laffer, Sn.C., First Lieutenant T. G. Anderson, Sn.C., Staff Sgt. R. J. Reiber, Sgt. R. B. McGhee, T/5 James Greene, and the Misses A. Gunderson, P. Moorman, L. Laffitte, M. Gaffney, J. Davis, and M. Askew, civilian technicians, of the Fourth Service Command Laboratory; to Colonel S. W. French, M.C., Chief of the Medical Branch, and Colonel C. G. Souder, M.C. and Major J. Poutas, M.C. of the Preventive Medicine Branch, Fourth Service Command, for their assistance in procuring facilities and materials for the conduct of this work; to the members of the Subcommittee on Meningococcal Meningitis, the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Dr. John J. Phair, Director, for advice and coöperation; to Brigadier General James S. Simmons, M.C., Colonel Stanhope Bayne-Jones, M.C., Lieutenant-Colonel Karl Lundeberg, M.C., and Captain Philip E. Sartwell, Preventive Medicine Section, Office of the Surgeon General, U. S. Army, Washington, D. C.; Lieutenant-Colonel Elbert DeCoursey, M.C., Commanding Officer of the Ninth Service Command Laboratory for supplying valuable advice concerning the application of the material presented.

American Journal of Public Health
and THE NATION'S HEALTH
Official Monthly Publication of the American Public Health Association
Volume 33 December, 1943 Number 12

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MEDICAL CARE MUST BE COMPLEMENTED BY PUBLIC HEALTH MEASURES

IN Congressional, sociological, medical, and public health circles there continues to be a lot of discussion of the medical aspects of the Wagner-Murray Bill which, according to its proponents would make good medical care freely available and according to its opponents would play havoc with medicine and medical care. Be that as it may, there seems some possibility that the medical features of this bill may be passed by the Congress for want of something better; and passage is rather likely if an increase in the rate of social security pay roll deductions is adopted as an anti-inflation measure.

Most thoughtful people agree that it would be unsound, as a public policy, to mix social security legislation and anti-inflation measures, even though this might at the moment seem expedient and popular. But suppose that in spite of this objection and regardless of the grave apprehensions many have about the medical aspects of the bill, it should be passed and really did provide a decent and extensive medical service. Even this would get the medical profession and the public no further forward than medical care of the individual if, as, when, and after he becomes sick; and this is not enough. Care of the sick is only a half measure, and in any planning for the health of the farmer in the field and the industrial worker in the factory, medical care must be buttressed with or complemented by a public health program sufficiently great in its scope and intensive enough to bring to the people of all communities the full benefits of preventive measures. It follows then that if the Wagner-Murray Bill or some other bill should be passed, or even if no bill at all is passed, there must in any event be a thumping increase in the amount which the public pays for the maintenance of its health.

To expect health agencies, operating on present miserable appropriations, to bring to the people the full benefits of modern science is to expect the impossible; and health administrators will be rendering no service to their cause or to the people for whose health they are responsible if they remain satisfied to act the rôle of remittance men. The time has come, or rather it came some years ago, when health officers need to say boldly that it costs real money to do decent public

health work, that the budget for a properly operating health program is not just an infinitesimal part of government expense. Probably one of the reasons why health department budgets are so small is that each health officer has emphasized to his appropriating body how little he asks in comparison with education, roads, parks, police, fire, etc. These more robust elements of government could employ the same argument if they were willing to conduct their activities on a nineteenth century scale. But they are not willing to do this, and they do get the funds. In the rough and tumble of affairs, humbleness is not normal nor is it either admirable or result-attaining.

It would seem well to state here that this emphasis on the urgent necessity of provisions for a substantial increase in appropriations for public health work does not arise from any tendency to deprecate the importance of the care of the sick; nor does it arise as part of an argument that prevention may entirely replace cure. Beyond a doubt, the world will always have its sick and probably some poor, in spite of all that science or society may do, and if one is realistic, this must be accepted. But with each succeeding generation there has been and there should continue to be an increase in the possibilities of prevention through public health measures, and from the standpoint of economy in time, money, and suffering, measures of this sort must be continually explored, expanded, and applied in association with service designed to care for the sick.

Now it has been suggested that there be included in the Wagner-Murray Bill (just in case it should pass) a provision that would insure reasonably adequate and specifically designated funds for state-aid in public health work, say some ten per cent of that amount which would be set aside for medical and hospital care. No one knows exactly how much the total Medical Care and Hospitalization Account would be, under this bill, but it is reasonably safe to say that ten per cent of it would loom large in comparison with present federal expenditures for public health purposes. Unfortunately it would not seem practicable to put this suggestion into effect, for funds raised under social security are contributed funds, ear-marked for the benefit of those who contributed them. Such funds could not be used for an over-all benefit to all the people of the nation unless all the people contributed, and the Wagner-Murray Bill does not propose that every person contribute. Such an impasse, however, does not offset the soundness of the proposition that medical care without adequate provision for public health programs would be but a half measure, and if this concept were to be accepted by Congress, its members could find ways and means.

In effect then this may be said: The Wagner-Murray Bill is alarming in its social implications. It has much that is sound in its medical provisions but at the same time contains many positive and negative deficiencies. We should be unhappy to see it pass in its present form, but if it is to be passed there should be made whatever adjustment is necessary in order to set aside from its derived funds a proportion sufficient to insure effective public health programs; and the proportion necessary to achieve this would be no mere pittance.

THE PUBLIC'S FOOT

ONE of the difficulties in getting people to take action in any given direction is that human beings are almost certain to miss the significance of a simple declarative sentence, or of a routine happening. To catch attention there must

be some emphasis by tone or inflection or accent or play on words, or some drama or association, or climax. In contrast to a flat declaration, consider the statement that "An army marches on its stomach." Here there is association between this truth in metaphor and the somewhat ridiculous mental picture that it creates. From this association comes remembrance, and remembering, one ponders. But if the statement is "The public walks on its feet," or if the observer notes that this is so, the listener or reader or observer is unimpressed. The information obtained is not news, nor is it dramatically presented. It appeals neither to the esthetic nor the intellectual, and it fails to arouse either sympathy or afterthought.

Even if "The public walks on its feet" is an unimpressive statement, the fact that man does so walk, rather than on feet and hands, has created a far-reaching public health problem. For though structurally and functionally the foot is an amazing mechanism, it is not yet completely adapted to the erect posture. Nor is the bony skeleton of one person's feet so exactly like another's, or the amount and distribution of downward pressure so much the same that, proper width and breadth assured, the ordinary stock shoes are suitable for all people. The net result of these various contributing factors is foot trouble for a large proportion of the public, just what proportion it is hard to say. No hard, cold, reliable data are available on this point, but common observation indicates that more than a majority of adults have one or another kind of foot pain, weakness, or impairment. If this were not so, bedroom slippers would not always be shown in pictures of the tired business man, relaxed at home. And if uncomfortable feet were not a part of woman's cross, there would be lots less pawing around for shoes in the dark of the moving picture theater.

It may fairly be said then, that foot discomfort and partial disability are relatively highly prevalent. At the same time it must be confessed that there are few places to which the foot sufferer may turn with any assurance of relief. Foot troubles do not kill, nor are they as a rule completely disabling, and the medical profession and public health workers are not inclined to give much thought to a disability which does neither of these things. Apparently the subject is beneath the notice of the high-powered orthopedist, and he will have none of it. Give him something that involves fractures, stiff joints, deformities, plaster casts and the adjustments of muscles, and he is your man; but go to the same orthopedist with nothing more serious, from his standpoint, than a callous, and he is not likely to be interested, and not assuredly competent. The average physician, for his part, lacks fundamental knowledge as to the complicated functional anatomy of the foot. He is not, therefore, in position to bring relief to the patient, and ends up by referring her or him to a shoe store or a chiropodist. This is not to suggest that physicians undertake the routine trimming of toenails or the cutting of corns. But it does seem worth emphasizing that pedal disabilities constitute a vast problem and a correspondingly vast demand for relief, and that since the medical profession is not meeting this demand, these sufferers are seeking aid and comfort in other directions. They thus create public support and, in some instances, legislative backing of those who, from the medical standpoint, must be regarded as irregulars and subprofessional, and therefore not a group to be encouraged. And, more important from the sufferer's standpoint, he gets only temporary relief, as a rule.

Another deterrent to serious consideration of the foot is that at its best, and even with red toenails, it is not a thing of which poets often write: of the ankle (female) yes; of the curve of the calf (female), higher and higher praise; but of

the foot, male or female, no. This is understandable, for to the casual observer, the foot is but a slewed-out, battercake-like extremity, with over-riding toes and a strong tendency to corns, callouses, and bunions. And so to the world at large the foot is not an inspiring subject and, unlike syphilis, has not been adopted by fashionable society as a drawing room topic. Each dowager and smart young matron tends to regard her own foot pains as personal, a bit on the vulgar side. Obviously, if the woman of leisure does not feel that this is a dilemma from which she must deliver her lesser sisters, the lesser sisters must continue to suffer surreptitiously, and so with the butcher, the baker, and the policeman on his beat. Not until these foot sufferers become as vocal and clamorous and objectionable as a militant minority, though they are not a minority, will the medical profession be moved to find an answer.

In spite of all these things, a few physicians have undertaken serious study of the comparative anatomy of the foot, of its evolution, its mechanics, of the effect of the erect posture and the pull of gravity on and through the foot. As nearly as can be gathered, these men have established relatively simple diagnostic procedures and quite effective therapy. Apparently, however, their pleas that the medical profession adopt a different attitude in regard to foot troubles, that it inform itself, and that it exercise modern diagnosis and therapy have fallen on deaf ears. And the suggestion that foot troubles constitute a public health problem is likely to strike horror in the hearts of the virus worker, the nutritionist, the administrator, the epidemiologist, unless they happen themselves to have some personal experiences along this line. But let it not be forgotten that the high incidence of a minor and lowly disability may constitute a more serio s public health problem than does some aristocratic but comparatively rare disease.

Credit Lines

IT was a simple matter for the Editors to decide that this issue of Credit Lines would be devoted to the Association's Wartime Conference and 72nd Annual Business Meeting and Meetings of Related Organizations held in New York City, October 11 to 14. It was another thing to agree on where to begin and what to select for mention from among the events and personalities which together made an engrossing week.

It seemed safe to start with the delegates, who, after all, are the most important part of a convention. There were so many of them, 3,603 to be exact, that programs ran out by Tuesday noon and a supplementary mimeographed edition, done overnight, melted entirely away before lunchtime on Wednesday. This largest registration in the Association's history was solid-pack, professional public health workers, with little dilution by wives and guests. It may well have historic importance, if it is, as we believe, the largest number of professional public health workers that has ever come together anywhere in the world at any time. A claim to a " Famous First " is always immediately challenged, so we are guarded in making that statement. If anyone knows of a larger meeting—of professional public health workers now—we should like to be reminded of it. The American Health Congress, held in Atlantic City, N. J., in 1926, will not be accepted as a rival. While the attendance there was well over 6,000, the members of the American Nurses Association were largely responsible for it, so that does not count.

First and full credit, then, goes to the 3,603 delegates for good-naturedly accepting a program-less registration, crowded meeting rooms, accommodations in hotels whose names they never heard of before, when the Pennsylvania, New Yorker and other nearby places were packed to the gunwales, and, most of all, for making the effort to come. They got their money's worth, thanks to the Program Committee who wrote the play and provided the actors, and to the New York Local Committee who produced it.

The production end of an operation as extensive and involved as an Association meeting isn't done with one hand tied behind the Chairman's back, nor with mirrors. Dr. Ernest L. Stebbins, as General Chairman of the Local Committee, and his subcommittees on Finance, Reception, Meeting Rooms, Radio, and Publicity, had their collective hands full. The real test of the effectiveness of the producing job is keeping secret from as many delegates as possible how much work is done before the curtain goes up and how much is done backstage while the performance is going on. Dr. Stebbins, Mr. Frank Kiernan, Dr. John L. Rice, Dr. John Oberwager, Dr. Iago Galdston and Dr. Frank Calderone, Chairmen in that order of the subcommittees named above, kept the secret well.

The Finance Committee raised the money to do all the things for which money was necessary. Only Lend-Lease Administration could afford to pay on a dollars-and-cents basis for the many work-hours contributed to the Conference by members and friends of the Association in and around New York. The Meeting Rooms Committee kept the Section Officers and the speakers happy, no small responsibility. The Reception Committee made everybody happy. The Publicity Committee, by

dint of superhuman effort, succeeded in drawing in more abstracts of papers than were ever acquired before, and by so doing, giving the local and national press more material to work with than ever before. By the way, a limited number of sets of abstracts were collated by the Publicity Committee in winding up its affairs. They may be obtained, (as long as they last) on request to the Central Office. The committee developed its work plan under the slogan "Health Is Global," and its initial effort was to gather in statements on this theme from state and territorial health officers, from many Latin American health leaders, and from the ministries of health of our Allies. These air-mailed, wired, and cabled responses are eminently quotable. They have been mimeographed as well and are included in the abstract packet.

The Radio Committee was responsible for the Association's first connection with a program as notable as America's Town Meeting of the Air, with its millions of Thursday night listeners. Debating the question "Are Local Health Services a Responsibility of the Federal Government?" Dr. Abel Wolman and Dr. Nathan Sinai, for the affirmative, and Dr. H. H. Bauckus and Mr. E. A. Van Steenwyck for the negative, provided several hundred Wartime Conference delegates, who attended the broadcast in Town Hall, and large numbers of Association members at their radios at home with an entertaining and thought-provoking hour. This was one of three coast-to-coast broadcasts. The other two were sent by short-wave as well to Latin America. The dramatization, "The Battle for Health," written by Mr. Irve Tunick for the Association, will be published in the January JOURNAL. It is offered for re-use by public health workers in whole or in part without restriction.

Credit Lines would be ungracious if it did not bow in the direction of the Pennsylvania Hotel in acknowledgment of excellent service in spite of man power shortages and wartime restrictions.

The Program Committee, consisting of a small central group selected for over-all knowledge of and experience in public health and the Secretaries of the Sections, who, of course, represent special interests, was wholly responsible for the scientific content of the Wartime Conference. The fact that it was planning a program on wartime public health was not forgotten for a moment and the finished product of 176 papers and reports presented in 50 sessions turned out to be almost an encyclopedia of what the public health worker is doing, or at least should be doing, to meet problems posed by the war.

The play's the thing, perhaps, but as was mentioned before, the audience is important too, and the sustained interest of the delegates was nothing short of amazing. The final sessions on Thursday afternoon were as well attended as those in the early part of the week. One session on the last afternoon continued until 6 o'clock with not a rustle of impatience or an indication of saturation from the audience. Another at the same time went far beyond the usual 4:30 closing, with every one of the 450 chairs occupied and perhaps 200 persons standing or sitting on the floor. This was a special session entitled "The Evolving Pattern of Tomorrow's Health" where imaginative and exciting post-war planning was done with regard to housing, hemispheric coöperation, education, and health department responsibilities.

All the special sessions were high spots and there is evidence that many people are anticipating their publication in the JOURNAL as symposia. One on "Current Health Department Problems in War," under the leadership of Dr. Huntington Williams, used personnel shortages as a point of de-

parture. It was a panel session and by agreement no formal papers were prepared. Those papers describing "New Ventures Toward Health Security" and "Public Health Implications of Tropical and Imported Diseases" are awaiting the attention of the Editorial Staff. Four of the five papers comprising the post-war planning session appear in this issue.

There were interesting innovations in the technic of program building. Dr. Edmund K. Kline, Secretary of the Laboratory Section, experimented successfully with a session of what he called "abridged papers" under the title "What Is Happening in the Laboratory Field." In two and one-half hours, a large audience had the opportunity to hear 12 short papers, 5 to 7 minutes' presentation time, on as many subjects. A condition to being given a place on the program was the preparation of a full length manuscript for possible publication in the JOURNAL.

The new Section on School Health, in coöperation with the Food and Nutrition Section and the American School Health Association, sponsored a Workshop on "Adjustments of School Health Personnel in Wartime." Registration was requested in advance, admission was by card only, and the deliberately-chosen small meeting rooms with seating capacity of 50 assured the limitation of the size of the three groups. In an all day session, they attacked their problem as it relates to the rural, medium-size, and large community. The Maternal and Child Health Section, with support from the Food and Nutrition, Public Health Nursing, and School Health Sections, tried the Workshop idea, too, on problems connected with day care of children, with participants similarly limited as to numbers and self-divided according to their own interests, in state, large city, and small city groups.

The School Health Section, being new, without committees and without commitments, used its Workshop as a device to determine its plan of work for the coming year. Since what could be done was so vast in its possibilities, focal points needed to be established. Dr. Leona Baumgartner, Chairman, and Dr. George M. Wheatley, Secretary, described the result as the emergence of islands here and there upon which school health people could scramble, look around a bit, and make up their minds what to do next. Task forces will carry out the decisions reached during the months ahead.

One could dip into the Section programs anywhere and come up with a nugget, as the JOURNAL will prove month after month as it brings the papers and reports to its readers. Meetings of related organizations held on Monday, October 11, were noteworthy, especially the symposium on cancer. It must be recorded that the first announcement of the dramatic results following the use of penicillin in syphilis was made at a meeting of the Epidemiology Section on October 14. Another good story, although it does not represent a world-premiere, was the use of penicillin in gonorrhea, read at the same session. Both papers, by Dr. John F. Mahoney, *et al.*, appear in this JOURNAL. In the January number, one or more of the contributions to a symposium sponsored by the Oral Health Group, now the Section on Dental Health, on Post-war Implications of Fluorine and Dental Health will be published. Immediately ahead, too, is Earnest Boyce's "Objectives in the Programming of Post-war Sanitation Work" which was part of a symposium arranged by the Engineering Section on post-war opportunities and responsibilities of the sanitary engineer. The Food and Nutrition Section has a reserve of excellent papers which the Editorial Board will find it difficult to put in any pub-

lication order, and this is true of all the Sections.

Streamlined as the Conference was, and without entertainment, social features, inspection trips, and other pleasant adjuncts to the real business at hand, there was neither time nor opportunity for the many breakfasts, luncheons, and dinners which have characterized Association meetings in the past. All alumni get-togethers were discouraged, for example, and reluctantly but in realistic answer to the question "What wartime significance does this have?" the Annual Banquet was omitted. There was one exception to the prohibition against purely social functions, and as if to make up for their lack, this was enthusiastically entered into. The Public Health Association of New York City sponsored the Reception to the President, President-elect, and Distinguished Guests which followed the opening General Session on Tuesday evening, and, aided and abetted by the Reception Committee, demonstrated a unique method of getting everybody acquainted with a minimum of formality and waste motion. The receiving line was dispensed with. Instead, great placards at intervals around the reception room announced that here were temporary headquarters for the Association Officers and Distinguished Guests; there the Public Health Association of New York City would receive; yonder were the representatives of State Health Departments—New Jersey, New York, and Connecticut; across the way stood the National Health Honor Roll Health Officers, and in the far corner the folks from the New York City Health Department. It was thus made easy for delegates to seek out the people they wished to see. After an interlude of hand-shaking and conversation, refreshments were served through the courtesy of the Lily-Tulip Cup Corporation. Door prizes were awarded and there was spirited competition among several quartets made up on the spur of the moment. They were singing not for their suppers but for a quartet of War Bonds. The winners, to the satisfaction of everyone with the possible exception of the unsuccessful aspirants, were six, yes six, young people from the Latin-American delegation. No one knew how the quartet became a sextet, but it did, and six War Bonds were eventually delivered by the generous hosts.

The Opening General Session itself was made memorable by the color of Mayor Fiorello H. LaGuardia in his address on Post-war Public Health, by the thoughtful Presidential Address of Dr. Felix J. Underwood, and by the presentation of the Sedgwick Memorial Medal to Brigadier General James Stevens Simmons, M.C. Dr. Underwood chose to speak on "Planning Today for Public Health Administration Tomorrow," and the paper is published in this issue.

For the third successive year, the Association's Annual Meeting was enriched by the presence of a number of representatives of Latin-American countries. Their attendance made possible by the Pan American Sanitary Bureau and the Office of the Coördinator of Inter-American Affairs, and a few coming as direct emissaries of their own governments, 68 of our friends to the south were present. Predominant among them were those with health education and laboratory interests. It will be recalled that administrative health officers were most numerous in the group that came to us in 1940, while last year engineers were in the majority. On the general program, delegates had the privilege of hearing Dr. Hernan Romero, Director, School of Public Health and Professor of Preventive Medicine and Hygiene, School of Medicine, University of Chile, Santiago; Dr. Felix Hurtado, Undersecretary of Health, Havana, Cuba; Dr.

Mario Pizzi of Chile; and Dr. G. H. de Paula Souza of Sao Paulo, Brazil. Through the good offices of Dr. Hugh S. Cumming and Dr. A. A. Moll, a special evening program was arranged where a number of papers on health problems and progress in several Central and South American countries were presented. While this was well attended, the real tribute to these visitors was paid by the Association on the occasion of the Second General Session. This was the only luncheon meeting of the Conference and it was attended by more than 500. Professor C.-E. A. Winslow, as spokesman, graciously and sincerely expressed the Association's "Welcome to Our Public Health Colleagues from the Americas." At the luncheon, too, forty year membership certificates were presented by Dr. Freeman to Dr. John F. Anderson, Mr. Wellington Donaldson, and Professor Irving Fisher, and the Health Officers of the communities on the National Health Honor Roll for 1942 were recognized.

The Health Education Center, conducted by the National Publicity Council for Health and Welfare Services for the Association, provided many educators-in-search-of-ideas with just what they were after. The Center was not a place for casual on-lookers. It was a spot where people stopped to look for a minute and hours later they were still there, wrapt, with portfolios piled high around them, and their own notebooks bulging. Mrs. Sallie Everson Bright and her colleagues turned the Center inside out to give the customers what they wanted.

And there was the Motion Picture Theatre with Mr. Thomas C. Stowell the impresario. And there were technical and a very limited number of scientific exhibits, crowded into small space necessarily, but still large in their implications of usefulness to public health workers.

The Association's exhibit of health books of all publishers reappeared after an absence of several years. Conducted for the Association by the National Health Library, it presented nearly 500 recent books for the inspection of delegates. Featured was a "Five-Foot Shelf of Basic Books for Health Workers" compiled by the National Health Library Committee with the advice of the Secretaries of the Sections. Each Secretary was asked "If you were required to practise your specialty with only one book, what would you choose to work with?" In some instances one text was named; in others, any one book was declared inadequate and several were named as essential. Every Section Secretary contributed something to the Five-Foot Shelf, and the Library Committee made the final selections, after a period of firing the same question at all visitors to 1790 Broadway who would listen. No one reminded the committee of G. K. Chesterton's famous reply to the familiar question "If you were shipwrecked on a desert island, what book, etc." It was, you will remember, *Thomas' Guide to Practical Boat-Building*. The Shelf interested so many delegates that they carried away more than one thousand copies of a leaflet in which the titles of the books displayed thereon were printed. The few copies remaining will be mailed to those who request them.

What about a meeting next year? The question was asked many times with an inflection that indicated no doubt on the part of anyone that one should be held. But the Executive Board will decide that when it meets on January 28.

"WHERE DO WE STAND?"

This is the question prompted by any resident of the 135 communities which are represented in the 60 charts recently issued in a booklet by the Committee on Administrative Practice of the

American Public Health Association, under the title "Health Practice Indices." Proportion of tuberculosis cases reported in the minimal stage, births in hospitals, infants under nursing supervision, syphilis contacts examined, immunization of children under 2 years of age, pasteurized milk, satisfactory water supplies, budgets of health departments. These are samples of the practices which are graphically presented showing where each community stands in the array. The data were taken from the *Evaluation Schedules* presented for the National Health Honor Roll for the years 1941 and 1942. The names of communities are not shown, but any health officer represented can determine from his own data just where he stands in the country-wide array.

This is probably the first time that a widespread picture of detailed health practices in the United States has ever appeared in print. The pamphlet is intriguing. It is bound to create not only widespread interest, but should serve as a strong stimulus to do a better job. We are indebted to George T. Palmer, Dr.P.H., the Chairman of the Subcommittee on Manual and Appraisal of Local Health Work, and Mrs. Erminie Cross Lacey of the Commonwealth Fund, who was responsible for the tabulations and charting.

A COURSE OF STUDY IN HEALTH FOR BOSTON'S PAROCHIAL SCHOOLS

The Catholic Archdiocese of Boston has published a course of study in health for grades 1 to 8 which was prepared by the Boston Health Department and the schools of the Archdiocese. Among the members of the Committee on School Health Services are Charles F. Wilinsky, M.D., Deputy Commissioner of Health of Boston and Superintendent of Beth Israel Hospital; G. Lynde Gately, M.D., M.P.H., Commissioner of Health of Boston; and Clair E. Turner, Dr.P.H., of the Department of Public Health of Massachusetts Institute of Technology.

The significance of this coöperative venture between the health department staff and the parochial schools is even greater than the excellent content of the volume, since it may well provide a pattern for health education in other areas.

WORTH ACQUIRING

The September, 1943, issue of *Channels*, publication of the National Publicity Council for Health and Welfare Services, Inc., 130 East 22nd St., New York, N. Y., for its article on "What's Ahead in Health Education" sub-titled "A Glimpse of Current and Coming Events and Materials"; also for the article "Organize the Story for Labor" which tells how to work through labor unions.

The first 1944 calendar we have seen, distributed with the "Compliments of the New York State Department of Health, Division of Public Health Education," Edward S. Godfrey, Jr., M.D., Commissioner, and Burt R. Rickards, Director. Safety—Yesterday and Today is its theme. Colorful, quaint, amusing, sometimes nostalgic, and altogether delightful, no one will relegate this to the waste-basket.

"Post-War Construction," a program adopted by the Board of Directors of the American Society of Civil Engineers, 33 West 39th St., New York, N. Y., which includes housing. Brief and concise and interesting because it presents a program of immediate planning, starting from where we are and not geared to the brave new world our national advertisers have dreamed up for us.

"Selection and Training of Volunteers in Child Care," published by the Children's Bureau, Washington, D. C. A partial solution of the problem of personnel shortages in nursing, teaching, social work, and health education.

The October 4 issue of *Life* for its ten page discussion of the essentials of nutrition and what must be done to achieve a balanced diet for the whole world.

"Standards for Neighborhood Recreation Areas and Facilities," National Recreation Association, 315 Fourth Avenue, New York, N. Y. You can check how your community stands with relation to the standard space requirement of one acre of neighborhood playground space for each 800 of the population, a community recreation building for at least every 20,000 of the population and other things.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Mind, Medicine and Man—*By Gregory Zilboorg. New York: Harcourt Brace,* 1943. 344 pp. Price, $3.50.

Mind, Medicine, and Man, is an original and provocative book. It is original in the sense that it is laden with the author's personal and unique interpretations and pleas. It is provocative in the sense that many of the author's interpretations elicit numerous questions and strong dissent.

The most satisfactory chapters of the book are those entitled "Instincts and Their Manifestations," "Normal Neuroses and Personality," "Certain Aspects of Mental Illness," and "Theories and Practice." In these chapters the author restates, frequently very aptly, the basic theories and principles of psychoanalytic psychiatry. Here, with profit, the author works over well cultivated ground. The preceding chapter "On Certain Misconceptions," and those that follow "Civilization and the Social Sciences," "Varieties of Human Aggression," "Crime and Judgment," and "Psyche, Soul, and Religion" constitute the author's "dicta" on a variety of subjects, principally on sociology, anthropology, criminology and law, and religion.

It is not possible in the space of a review to elaborate the questions and dissents which these portions of the book evoke. A few general comments must suffice. Dr. Zilboorg is evidently a man of wide knowledge, but his erudition frequently encumbers his exposition. He is at times guilty of overstatement, and of strong affirmation, where only tentative suggestion is warranted. He does poor justice to Jung and none at all to Adolf Meyer. He is at times careless in his statements on medical history.

Nonetheless this work can be read with profit, precisely perhaps because it is so provocative.

IAGO GALDSTON

Rehabilitation of the Tuberculous—*By H. A. Pattison, M.D., F.A.C.P. Livingston, N. Y.: Livingston Press,* 1942. 186 pp. Price, $2.50.

Public health workers as a group are not leaders in the field of rehabilitation. This volume is significant partly because the author, after a varied background of public health experience, has published a review of what we know about rehabilitating the tuberculous, and it can be read with profit by anybody. The volume includes a review of the problems underlying rehabilitation and, in Part 2, an account of in-sanatorium work, together with accounts of the programs in 18 rehabilitation centers in the United States and abroad.

As a point of departure for post-war planning, this book can be widely useful. It might open the eyes of other readers as it has opened the eyes of this reviewer. REGINALD M. ATWATER

Essays in Biology—*In Honor of Herbert M. Evans. Los Angeles: University of California Press,* 1943. 687 pp. Price, $10.00.

This beautifully printed and elegantly bound volume was prepared in honor of Herbert McLean Evans, Professor of Anatomy at the University of California, by a group of his friends

on his 60th birthday. It contains 48 articles on various biological subjects ranging from the historical and philosophical such as "The Impact of the Introduction of Iron on Medical and Religious Thought" by Alvarez, and "Impotency as a Result of Witchcraft" by Sigerist, through diverse phases of endocrinology such as "Pituitary Gonadotrophins" by Fraenkel-Conrat, Choh Hao Li and M. E. Simpson, and "Ovum, Cycle and Menstruation" by Zondek, to others on Physiology, Embryology, Nutrition, and on Pathology, the latter including titles such as "Pulmonic Interstitial Emphysema and Its Sequelae" by C. C. Macklin and M. T. Macklin, and "Observations on the Pathogenesis of Undulant Fever" by K. F. Meyer. A detailed analysis or even a complete list of all of these essays is not possible here because the fields covered are too diverse for review by one individual. The list of authors, however, alone carries authority and prestige which make this collection of essays a highly desirable source book for research workers and a monumental tribute to Professor Evans and his very fruitful and stimulating life work which, it is earnestly hoped, may continue for many years.

In the forepart of the volume are a fine sepia portrait of Dr. Evans, a dedication, and an explanatory note with acknowledgements from the Publication Committee consisting of Samuel T. Farquhar, Chauncy D. Leake, William R. Lyons, and Miriam E. Simpson, Chairman. These are followed by a biographical sketch, a complete bibliography of Dr. Evans (containing nearly 400 citations) from 1904 to 1942, and a table of contents.

MARTIN FROBISHER, JR.

Atlas of Human Anatomy—*By F. Frohse, M. Brodel, and L. Schlossberg. (New ed.) New York: Barnes & Noble,* 1942. 90 pp. Price, $2.25.

This book has been known since its first edition for the excellent color reproduction of the celebrated Frohse-Brodel anatomical charts. Public health workers who have sometimes only a thin veneer of knowledge in human biology will profit by and also enjoy the excellent introduction and explanatory text by Jesse F. Williams. The new edition shows for the first time a series of illustrations on the endocrine glands. As the microscopic illustrations are not in color, they do very little in helping to understand the function of the glands, and the explanatory text of this chapter by Charles F. Geschickter is too technical for the non-medical reader. Nevertheless, the book is still the best available pocket-size atlas on human anatomy.

BRUNO GEBHARD

Public Works Engineers Yearbook—1943—*Chicago: American Public Works Association,* 1943. 333 pp. Price, $3.75.

This publication includes the year's affairs of the association and the proceedings of the 1942 Public Works Congress. Important and authoritative information on current technics and practices, reflecting the impact of war induced conditions upon essential operations in the public service field, is given in the proceedings. Employee relations, financial programming, substitutes and salvage, traffic, operation of sewerage systems and developments in refuse collection and disposal are among the topics covered.

ARTHUR P. MILLER

Laboratory Manual for Chemical and Bacterial Analysis of Water and Sewage—*By Frank R. Theroux, M.C.E., Edward F. Eldridge, M.S., W. LeRoy Mallmann, Ph.D. New York: McGraw-Hill,* 1943. 274 pp. Price, $3.00.

This manual now appears in an enlarged third edition. In format it resembles the previous editions in that procedures are listed step by step. An entirely new section dealing with the testing of boiler waters has been added for the first time. Eight new testing procedures are suggested, descriptions are given for the preparation of about 20 new reagents, the general discussion of chemistry and related topics has been expanded, and many revisions have been made in the bacteriological section as a result of recent developments in this field. In addition, problems with answers are included in the general chemical discussion.

There is no doubt that the book in its present edition will prove to be as popular with operators, students, and others as have past editions. To this reviewer, however, it seems that recent research has given sufficient emphasis to the need for proper dilution waters in some of our biochemical oxygen demand studies on sewage and trade wastes to warrant a discussion of these waters and of procedures for their preparation. C. P. STRAUB

Health Practice Indices—*Prepared by the Subcommittee on Manual and Appraisal of Local Health Work for the Committee on Administrative Practice of the American Public Health Association. New York,* 1943. 73 pp.

In *Health Practice Indices,* data submitted from the evaluation schedules for the National Honor Roll have been compiled. These make possible a study of the accomplishments in certain services of health departments. Analysis of these data for an understanding of procedures, and the assembly of this material in a form available for study by the various communities, seems to be a good idea. Although in evaluating administrative practice it is desirable to know the procedures being rendered and to compare results for various areas, such comparisons are extremely difficult. It is well known that the comparison of crude death rates is subject to error. How much more difficult is the comparison of health department services when the actual need for health services varies in communities over the country according to composition of the population and the availability of medical services! Another factor to be considered is the need for adaptation of procedures according to local problems.

In *Health Practice Indices,* only communities are included which, due to interest or perhaps clerical assistance, submitted schedules, and thus the results are probably not representative of health department services for the country. Since the data have not been checked for consistency of interpretation, without doubt some of the variation—especially the extreme values—may be due to errors in the data submitted. One hundred per cent success is hard to attain in any program!

These are some of the factors to be considered in reading and using *Health Practice Indices.* This report should serve to stimulate discussion of the practicability and need for measures of health service. R. H. HUTCHESON

A Guide to Practical Nutrition—*Sponsored by the Committee on Nutrition and Deficiency Diseases of The Philadelphia County Medical Society. Edited by Michael G. Wohl, M.D., and John H. Willard, M.D. The Philadelphia County Medical Society,* 1943. 98 pp.

This manual is a paper bound reprint of a series of short articles on various aspects of nutrition which appeared in *Philadelphia Medicine* in 1941–1942. The author of each of the thirteen subjects covered is a clinician, investigator, or dietitian on the staff of a local hospital or medical school.

The *Guide to Nutrition,* according to

the editors, is to be considered as part of a program of public health education and not a complete coverage of the field of nutrition, and is presented to the medical profession in order to increase the practising physician's interest in the new knowledge of nutrition.

The committee and authors are to be commended for their efforts to stimulate interest in this field. However, since the articles are written in a style and manner more suitable for journal presentation, one suspects that the purpose for which they were intended has already been accomplished by the original publications. There has been so much written recently on practical nutrition, both in a comprehensive and a brief form, that unless a new book possesses some unusual merits it is apt to attract little attention. *A Guide to Practical Nutrition* is not an exceptional book. The quality of the articles varies considerably; some subjects are presented concisely, clearly, and adequately for the purpose intended, while other sections suffer from lack of judgment in selection and interpretation of material or in clarity of presentation. The coverage is insufficient to recommend it as a guide to those interested in a brief but complete summary of the subject. However, the book will be of interest to those who wish to read short summaries of selected topics.

OTTO A. BESSEY

General Bacteriology—*By D. B. Swingle. New York: Van Nostrand,* 1943. 313 pp. Price, $3.00.

This is a reprinting of a beginner's text originally published in 1940. The author considers the usual method of presenting bacteriological knowledge to be too frequently an elaboration of medical bacteriology, and has endeavored to present it as a distinct science with orderly arrangement, principles and applications comparable to those found in other sciences. Relationships to other branches of biological science, physics, and chemistry are stressed with the object of giving beginners a broad base on which to build advanced studies in the field.

Fundamentals of bacterial morphology, classification, and metabolism are presented first, followed by a brief discussion of yeasts and molds, and then by a series of chapters on bacteria of the soil, water, air, milk, industry, etc. Finally 40 pages are devoted to infection, immunity, and pathogenic organisms.

The text is illustrated with many photographs and drawings, most of the latter giving an impression of size and detail much beyond anything actually seen under the microscope.

EDMUND K. KLINE

Public Health Nursing in Obstetrics, *Part IV, Mothers' and Fathers' Classes—New York: Maternity Center Association.* 108 pp. Price, $1.00.

Maternity Center Association's quarter century of experience in conducting Mothers' Classes, makes this book an attractive and a valuable source of information for any who want to start this kind of educational maternal health work. A good case is made for the need for more men's and women's classes. Ways to organize and conduct classes for both men and women are listed. Among the subjects considered are the instructor, sponsorship, approach, classroom arrangement, and teaching aids. If followed, the suggestions listed will protect the would-be-educator from a number of errors. The unit outlines will serve as a check list for those who have been conducting classes and wish to compare course content.

The seven instruction units on Teaching Suggestions and Outlines for Mothers' Classes cover 75 of the book's 108 pages. Each outline has an introductory statement. Those which pre-

ceed the first two units are narrative in form and exceptionally well done. There is some unevenness in the quality of the outlines. The first two are quite technical and consist mostly of the basic material a teacher should have mastered for interpretation. Some instructors would not find that their class groups could benefit by such detailed discussions. The remaining outlines are both more general and more practical. Two features, the Bibliography and Teaching Aids, are more than ordinarily complete for such a volume, and the illustrations of the charts produced by, and available from Maternity Center are reproduced exceptionally well.

Though the Teaching Outlines for Fathers' Classes are rather disappointing in their brevity after the complete outlines for mothers, nevertheless, this book will be well received by those who are teaching, or those who plan to teach classes for mothers and fathers.

DAVID B. TREAT

Shipboard Medical Practice—*By W. L. Wheeler, Jr. New York: Cornell Maritime Press,* 1943. 106 pp. Price, $1.00.

Shipboard Medical Practice is a handbook of 106 pages on emergency medical aid at sea. The advice and instructions given are based on using the materials and resources ordinarily available to seamen on ships and in lifeboats. The book is plainly written in a clear and concise language for seamen with little or no medical knowledge. Information on artificial respiration, shock, wounds, exposure, nutrition, and general care of lifeboat survivors is included. The supplies furnished in "Lifeboat and Life Raft First Aid Kits" are listed. The use of sulfathiazole in several different forms and for a number of different conditions is described.

A number of preventable diseases are discussed as to prevention, symptoms, and treatment. While the entire discussion of specific diseases is quite brief, the preventive phases particularly, appear to the reviewer to be somewhat inadequately covered. The chapter on sanitation is definitely too brief, and is not entirely up to date.

While this little book will undoubtedly serve as a helpful handbook, as intended, a number of other more complete books on First Aid and on the prevention, symptoms, and treatment of specific diseases would seem to be desirable for seamen who may be called upon to render emergency medical aid on shipboard.

There is a closing chapter on the proper way to send emergency radio messages to medical officers of the U. S. Public Health Service, in order to be understood and thus save time, suffering, and perhaps life by receiving prompt advice.

ALFRED H. FLETCHER

Plumbing Practice and Design—*Volume 2—By Svend Plum New York: Wiley,* 1943. 329 pp. Price, $4.50.

This companion volume to the author's first text on plumbing is an attempt, as previously stated, to consolidate the scattered data on plumbing, and to present these data in uniform terminology and in a manner usable for solving the many problems occurring in the design of plumbing systems. Practical information is presented for use in the layout and design of water supply and heating systems, sewerage and drainage systems, and gas piping systems. There is a chapter on definitions of physical and chemical terms, one on codes and regulations, and one on architectural practice.

This text should do much to eliminate some of the mystery which shrouds present-day design of plumbing systems, as the designs presented are based on sound engineering principles.

C. P. STRAUB

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

In a Nutshell—For the past ten years the peak of the polio epidemic has usually occurred in the middle week of September, the average number of cases reported during the first 36 weeks of the year being 3,796. For 1943 the number reported (up to September 11) was 6,792. States with the highest incidence were: Connecticut, Illinois, Kansas, Oklahoma, Texas, Colorado, Arizona, Utah, and California.

ANON. Prevalence of Poliomyelitis. Pub. Health Rep. 58, 38:1412 (Sept. 17), 1943.

Reassuring Report — Highlights from a health accounting of the services: disease incidence lower in '42 than previous year and continuing good in '43; Army's V.D. at all-time low; meningitis epidemic fell off quickly; vaccinations proved effective against the diseases for which they are intended; dysenteries constitute chief threat in areas of high incidence, but malaria is the leading enemy. There are adequate supplies of essential drugs.

ANON. Health of the Armed Services. J.A.M.A. 123, 8:487 (Oct. 23), 1943.

Thoughts on an Inferential Science—This dissertation on wrong-way epidemiology and opinionated epidemiologists is not easy reading but it will make you into a more humble person if you read it. Humble and more soundly functioning, too.

AYCOCK, W. L. and RUSSELL, F. F. The Functions of Hypotheses in Epidemiology. Am. J. M. Sc. 206, 3:399 (Sept.), 1943.

Too Bad!—Calcium is probably one of the prevalent deficiencies in our diet. This researcher went to great pains to see if a galvanic current could be used to measure the adequacy of calcium nutrition, but he reached the conclusion that he had educed no evidence that the response to galvanic stimulation was a good test for mild deficiency states.

BEEBE, G. W. Medical Evaluation of Nutritional Status. Milbank Quart. 21, 4:311 (Oct.), 1943.

Typhoid Vaccine at Work—Evidence is presented which indicates that the triple typhoid vaccine now used by the army is considerably the superior of the T A B product used during World War I.

CALLENDAR, G. R. and LUIPPOLD, G. F. The Effectiveness of Typhoid Vaccine Prepared by the U. S. Army. J.A.M.A. 123, 6:319 (Oct. 9), 1943.

Home Care of the Sick—How do people behave when they are sick? Some go to the doctor and more than half of those who do have medicine given or prescribed for them. Some ask the druggist what to take, but more think that Peruna, *et al.*, will do the trick so they demand what they want. As one might expect, men and women, well-to-do and poor, smalltown slickers, and city people all behave variously in these matters.

COLLINS, S. D. The Frequency of Doctor's Prescriptions and of Laboratory and Related Services in the Treatment of Illness. Milbank Quart. 21, 4:344 (Oct.), 1943.

Timely Notes on the Sniffles—Sinusitis, otis media, and the other sequelae of the common cold are reduced in number and severity if nose and throat are sprayed with a sulfonamide drug, with or without added medicaments, say the nine authors of the two papers named.

DOLOWITZ, D. A., *et al.* The Prevention of Ear and Nasal Sinus Complications of the Common Cold, (and) TURNBULL, F. M. *et al.* Sinusitis and Infections Secondary to the Common Cold. J.A.M.A. 123, 9:534 (Oct. 30), 1943.

Report on the First Ten Thousand—Adding up the minor disadvantages and major advantages of caudal analgesia, the authors point out again the great need for a high degree of obstetric competence on the part of physicians who propose to utilize the method. In such hands fetal mortality should be considerably decreased.

HINGSON, R. A., and EDWARDS, W. B. Continuous Caudal Analgesia. J.A.M.A. 123, 9:538 (Oct. 30), 1943.

What Next? — Sulfadiazine by mouth in small doses is an effective method of curbing epidemics of meningitis among large bodies of troops.

KUHNS, D. M., *et al.* The Prophylatic Value of Sulfadiazine. J.A.M.A. 123, 6:335 (Oct. 9), 1943.

Send Not To Ask For Whom the Bell Tolls—This is the story as I remember it: on a stifling July morning the chicken meat to make a supper salad for a large institution was shredded from the carcasses by hand, then salad dressing was thoroughly mixed into the meat, also by hand (bare), then the salad stood until supper time. One of the kitchen help who did the mixing had returned to work a day or two earlier after a 4 day bout with diarrhea. Just to complicate the picture, the cooked fowl stood for a day before shredding, the kitchen was far from clean, cockroaches and flies were plentiful. Instead of retailing to you the morbid statistics of the epidemic, these questions are asked: are there institutions like this one in your bailiwick, and what are you doing about them?

LUMSDEN, L. L., *et al.* A Study of an Outbreak of Food Poisoning in Galveston, Texas. Pub. Health Rep. 58, 41:1497 (Oct. 8), 1943.

A Challenge to Unintelligent Complacency — Noise, say these authors, such as now attends most human activities is injurious. This is not a matter of speculation. Further, relief from noise is procurable, so patient endurance of excessive man-made noises is no longer a virtue. To this every reader of the article will say: Amen.

MCCORD, C. P., and GOODELL, J. D. The Abatement of Noise. J.A.M.A. 123, 8:476 (Oct. 23), 1943.

When Infected Hairs Become Fluorescent—This story of the unusual ringworm epidemic in certain New York schools, and the effective methods employed to end it should be clipped and stored away safely in your files of scientific material. Such an outbreak "shouldn't happen to you" but it may.

MITCHELL, H. H., *et al.* An Epidemic of Ringworm of the Scalp. Pub. Health Nurs. 35, 10:564 (Oct), 1943.

Early Treatment for Rabies — Conclusion-jumpers had better keep both feet on the ground but, experimentally, wounds inoculated with fixed rabies virus were as effectively treated when irrigated with green soap solution as when they were cauterized with fuming nitric acid. Sulfanilamide did no good whatever, and iodine "also ran."

SHAUGHNESSY, H. J. and ZICHIS, J. Prevention of Experimental Rabies. J.A.M.A. 123, 9:528 (Oct. 30), 1943.

Up to the War Years the Record Was Fine—From 1900 to 1941 the tuberculosis death rate shows an almost continuous, year-by-year decline (except for 1918). And this has occurred despite the ageing of our population and the late inclusion of certain states (with higher TB rates) to the registration

area. The decrease for females was greater than for males, and the reduction has been experienced by other groups as well as whites. A curve of tuberculosis mortality relative to total mortality is suggested as an indicator of future courses of the disease.

YERUSHALMY, J., *et al.* Tuberculosis Mortality in the United States. Pub. Health Rep. 58, 40:1457 (Oct. 1), 1943.

BOOKS RECEIVED

A HUNDRED YEARS OF MEDICINE. By C. D. Haagensen and Wyndham E. B. Lloyd. New York: Sheridan House, 1943. 443 pp. Price, $3.75.

THE EDUCATION OF NURSES. By Isabel Maitland Stewart. New York: Macmillan, 1943. 399 pp. Price, $3.50.

HEALTH INSTRUCTION YEARBOOK, 1943. Oliver E. Byrd, Editor. Stanford University Press, Calif., 1943. 308 pp. Price, $3.00.

CRIMINAL CAREERS IN RETROSPECT. By Sheldon and Eleanor Glueck. New York: Commonwealth, 1943. 380 pp. Price, $3.50.

CLINICAL LABORATORY METHODS AND DIAGNOSIS. By R. B. Gradwohl. 3d ed. St. Louis: Mosby, 1943. Vols. 1 and 2. Price, $20.00.

AN INTRODUCTION TO FOODS AND NUTRITION. By Henry C. Sherman and Caroline Sherman Lanford. New York: Macmillan, 1943. 292 pp. Price, $2.00.

SYNOPSIS OF TROPICAL MEDICINE. By Sir Philip-Manson-Bahr. Baltimore: Williams & Wilkins, 1943. 224 pp. Price, $2.50.

BODY POISE. By Walter Truslow. Baltimore: Williams & Wilkins, 1943. 312 pp. Price, $4.50.

NATURE AND TREATMENT OF MENTAL DISORDERS. By Dom Thomas Verner Moore. New York: Grune & Stratton, 1943. 312 pp. Price, $4.00.

PRINCIPLES AND PRACTICE OF REHABILITATION. By John Eisele Davis. New York: Barnes, 1943. 211 pp. Price, $3.00.

BIOCHEMISTRY OF THE FATTY ACIDS. By W. R. Bloor. New York: Reinhold, 1943. 387 pp. Price, $6.00.

CLINICAL DIAGNOSIS BY LABORATORY EXAMINATIONS. By John A. Kolmer. New York: Appleton-Century, 1943. 1239 pp. Price, $8.00

PERSONAL AND COMMUNITY HEALTH. By C. E. Turner. 7th ed. St. Louis: Mosby, 1943. 585 pp. Price, $3.50.

FOOD POISONING. By Elliott B. Dewberry. London: Hill, 1943. 186 pp. Price, $3.75.

FUNDAMENTALS OF NUTRITION AND DIETETICS: A WORKBOOK. By Alberta Dent. 2nd ed. New York: Wiley. 209 pp. Price, $2.00.

ORTHOPEDIC NURSING. By Robert V. Funsten and Carmelita Calderwood. St. Louis: Mosby, 1943. 602 pp. Price, $3.75.

TEXTBOOK OF PHYSIOLOGY. By William D. Zoethout and W. W. Tuttle. 8th ed. St. Louis: Mosby, 1943. 728 pp. Price, $4.75.

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VITAL STATISTICS RATES IN THE UNITED STATES 1900–1940. By Forrest E. Linder and Robert D. Grove. Washington: United States Government Printing Office, 1943. 1051 pp. Price, $1.75.

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LEADERSHIP AND ISOLATION. A Study of Personality in Inter-Personal Relations. By Helen Hall Jennings. New York: Longmans, Green, 1943. 240 pp. Price, $3.00.

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HEALTH PRACTICE INDICES. Prepared by the Subcommittee on Manual and Appraisal of Local Health Work for the Committee on Administrative Practice of the American Public Health Association. 1943.

SOVIET HEALTH. CARE IN PEACE AND WAR. New York American Russian Institute for Cultural Relations with the Soviet Union, Inc. 1943. Price, $.10.

EDUCATION FOR HUMAN MAINTENANCE. Better Health for Longer Lives. By W. W. Bauer. Chicago: Zurich Insurance Companies, 1943.

ASSOCIATION NEWS

JOHN J. SIPPY, M.D., PRESIDENT-ELECT

Dr. Sippy, a native of Madison County, Ill., is a graduate in 1899 of the St. Louis College of Physicians and Surgeons. He practised medicine for several years and was successively County Health Officer in Kansas and Epidemiologist to the Kansas State Department of Public Health. For three

JOHN J. SIPPY, M.D.

years he served as Executive Secretary of the Kansas Tuberculosis Association and as lecturer on communicable disease at the University of Kansas School of Medicine. In 1919, Dr. Sippy moved to Montana, where for three years he was Epidemiologist and then Director of Child Welfare in the Montana State Department of Health. Since 1923, he has been District Health Officer of the San Joaquin Local Health District, with headquarters in Stockton, Calif. Since 1934, he has been Associate Clinical Professor of Public Health and Preventive Medicine at the School of Medicine, Stanford University.

Since he has been in the West, Dr. Sippy has served as Secretary of the Montana Public Health Association and, in 1929, he was President of the Northern California Public Health Association. The Western Branch, American Public Health Association, honored him in 1941 with the Presidency. Twice he has been President of his County Medical Association. He was President of the League of California Cities in 1927. He has been a member of the White House Conference on Child Health and Protection and, for ten years, held a Reserve Commission as Passed Assistant Surgeon in the U. S. Public Health Service. Dr. Sippy joined the Association in 1919 and was elected to Fellowship in the Health Officers Section in 1930. Throughout the western states, Dr. Sippy has had a wide influence in administrative practice, where he is generally regarded as the Dean of local health officers.

FORTY-YEAR MEMBERSHIP RECOGNITION

At the 2nd General Session of the New York Annual Meeting and Wartime Conference, Dr. Allen W. Freeman, President of the Association, presented three forty-year membership certificates to the following persons: John F. Anderson, M.D. of New Brunswick, N. J., President of the American Public Health Association in 1916; Wellington

Left to right—Allen W. Freeman, M.D., Outgoing President of the Association, making presentation; John F. Anderson, M.D.; Wellington Donaldson; and Irving Fisher, Ph.D., LL.D. Seated is C.-E. A. Winslow, Dr.P.H., Chairman of the Sedgwick Memorial Medal Committee.

Donaldson of the Department of Public Works of New York City; Irving Fisher, Ph.D., LL.D., of Yale University, New Haven, Conn.

Dr. Freeman pointed out that this custom was begun 8 years ago, since which time twenty-three awards have been made to members who joined the Association as far back as 1878. The senior name of those holding extended memberships is that of Dr. John Harvey Kellogg of Battle Creek, Mich., who joined the Association in 1878. Dr. Kellogg thus completes 65 years of membership in the Association.

NEW A.P.H.A. SECTION ON DENTAL HEALTH

The Governing Council at the 72nd Annual Meeting of the Association recently held in New York City created a Section on Dental Health, making twelve sections in all for the American Public Health Association. This is an outgrowth of the Oral Health Group started in 1937 in an attempt to explore this field on an informal basis.

The new Officers of the Section on Dental Health are as follows:

Chairman: Kenneth A. Easlick, D.D.S., School of Public Health, University of Michigan, Ann Arbor, Mich.

Vice-Chairman: J. M. Wisan, D.D.S., State Department of Health, Trenton, N. J.

Secretary: W. J. Pelton, D.D.S., M.S.P.H., U. S. Public Health Service, Washington 14, D. C.

Section Council:

1948—C. R. Taylor, D.D.S., M.S.P.H., Michigan State Health Department, Lansing, Mich.

1947—Lester A. Gerlach, D.D.S., City Health Department, Milwaukee, Wis.

1946—George A. Nevitt, D.D.S., M.S.P.H.,

Sub-Treasury Building, 15 Pine Street, New York, N. Y.
1945—Richard C. Leonard, D.D.S., M.S.P.H., State Department of Health, Baltimore, Md.
1944—Allen O. Gruebbel, D.D.S., M.P.H., State Board of Health, Jefferson City, Mo.

This recognition of the expanding place of public health dentistry has been accomplished with full realization that public health dentistry stands to gain from the inter-Sectional relationships afforded by the American Public Health Association and especially with the interests represented in the School Health Section, the Public Health Education Section, the Food and Nutrition Section, and the Epidemiology Section. It is anticipated that, by means of joint sessions and other coöperative planning, there may be achieved a better orientation of public health dentistry with the other specialities of the public health movement.

The Association office is prepared to receive applications for membership in the new Section on Dental Health, either from persons already identified with other Sections of the American Public Health Association or from new members. Address the Association, 1790 Broadway, New York 19, New York.

PROGRESS IN THE MERIT SYSTEM UNIT

During the Annual Meeting of the Association, the Subcommittee on Merit Systems of the Professional Education Committee reported on progress in supplying examination materials to state merit system councils. Dr. George H. Ramsey indicated that the public health nursing materials have been used in 10 states for 34 examinations. There is now a substantial demand from other fields in public health and the Unit is prepared to provide examination questions for medical health officers, laboratory workers, and in the field of environmental sanitation. Subject consultants appointed to assist the Unit in the two latter fields are: Dr. Edmund K. Kline, Secretary of the A.P.H.A Laboratory Section, and Alfred Fletcher of Johns Hopkins University with the assistance of Walter Mangold of the University of California. Dr. Lillian Dick Long continues as psychometrician. Assistance in securing suitable questions for these fields is being sought from groups outside of the New York area, and reviewers—especially in the field of public health nursing—have been chosen from all over the United States.

During the Annual Meeting the staff of the Merit System Unit held consultation hours and a report of progress in the field of public health nursing was made by the Subject Consultant, Dorothy Deming, to the State Supervising Nurses and the Public Health Nursing Section. A round-table meeting, open to all interested in merit system problems, was held on October 14. Approximately 35 persons attended including representatives of the U. S. Public Health Service, Children's Bureau, and State Merit System Councils.

NEW FELLOWS OF THE AMERICAN PUBLIC HEALTH ASSOCIATION ELECTED AT THE WARTIME PUBLIC HEALTH CONFERENCE

Health Officers Section

Franklyn B. Amos, M.D., M.S.P.H.
Daniel Bergsma, M.D.
Edward R. Krumbiegel, M.D.
Carl N. Neupert, M.D., M.S.P.H.
William M. Smith, M.D., M.P.H.
Mary Steichen, M.D., M.S.P.H.
Wilmier M. Talbert, M.D., M.S.P.H.
Alexander Witkow, M.D., M.P.H.

Laboratory Section

G. D. W. Cameron, M.D., D.P.H.
Orren D. Chapman, M.D.
Ward H. Cook, M.D.
Gordon E. Davis, Sc.D.
William J. Deadman, M.B.
Claude E. Dolman, M.B., D.P.H.
George F. Forster, Ph.D.
R. J. Gibbons, M.D., D.P.H.

Bettylee Hampil, Sc.D.
Margaret W. Higginbotham, Sc.D.
Cyril K. Johns, Ph.D.
Col. Dwight M. Kuhns, M.C.
Edith Kuhns, B.S.
Donald J. Mackenzie, M.D., C.M.
J. Howard Mueller, Ph.D.
Ruth M. Myers, M.S.
Nathan Nagle, A.B.
Elizabeth I. Petran, Ph.D.
Percy M. Phelps, Ph.B., A.M.
Norman J. Pyle, V.M.D.
James D. Reid, Sc.D.
Morris F. Shaffer, Ph.D.
Major Edgar J. Staff, Sn.C.
William A. Starin, Ph.D.
Charles A. Stuart, Ph.D.
Earl J. Sunkes, D.P.H.
William H. Swartzendruber, B.A.
Anna I van Saun
Harriette D. Vera, Ph.D.
Kenneth M. Wheeler, Ph.D.
Lieut. Edwin O. Wicks
Arthur W. Wright, M.D.

Vital Statistics Section

John W. Fertig, Ph.D.

Engineering Section

Gerald E. Arnold, C.E.
Leonard M. Board, C.E.
Herbert M. Bosch, M.P.H.
J. Matt Carr, M.S.
Lloyd K. Clark, S.B.
Charles M. Davidson, B.S.C.E.
Samuel M. Ellsworth, B.S.
Herbert B. Foote, C.E.
Harold B. Gotaas, M.S.C.E., Sc.D.
Carl D. Gross, M.S.
Herbert H. Hasson, B.S.
Chauncey A. Hyatt
James M. Jarrett, B.S.C.E.
Francis W. Kittrell, M. S.
Clarence W. Klassen, B.S.C.E.
William H. Larkin, C.E.
Maurice LeBosquet, Jr., M.S.
David B. Lee, M.S.S.E.
John A. Logan, D.Sc.
Alan C. Love, M.S.S.E.
Franz J. Maier, B.S.C.E.
Milton M. Miller, M.S.
Emanuel H. Pearl, M.S.E.
Major Harley M. Riley, Sn.C.
Charles L. Senn, B.S.C.E.
L. Glen Shields, M.S.
Chester A. Smith, B.S.C.E
W. Brewster Snow, M.S.
Frank M. Stead, M.S.
James H. Stephens, M.S.
Dick C. Thompson, B.E.
Clarence J. Velz, C.E.
W. Wallace White, C.P.H.
Ben L. Williamson, M.S.
Joseph A. Willman, M.S.
Lewis A. Young, M.S.

Industrial Hygiene Section

Joseph C. Aub, M.D.
Hugh P. Brinton, Ph.D.
John F. Cadden, M.D., M.P.H.
Robert H. Flinn, M.D.
William G. Fredrick, Sc.D.
Lydia G. Giberson, M.D., C.M.
Lyman D. Heacock, D.D.S., M.P.H.
Lemuel C. McGee, M.D., Ph.D.
Stuart F. Meek, M.D.
A. Victor Nasatir, M.D., M.S.P.H.
Frank A. Patty, B.S.
O. A. Sander, M.D.
Alfred N. Setterlind, M.S.
Joseph Shilen, M.D.
Emil A. Steiner, M.D., M.P.H.
James H. Sterner, M.D.
Major Leon H. Warren, M.C.
John J. Wittmer, M.D.
McIver Woody, M.D.

Food and Nutrition Section

C. Olin Ball, Ph.D.
Adelia M. Beeuwkes, M.S.
Florence H. Case, B.S.
Ruth C. Clouse, Ph.D.
James E. Fuller, Ph.D.
Robert S. Harris, Ph.D.
Raymond Hertwig, B.S.
Bertha Holman
Bernice Hopper, M.S.
Helen A. Hunscher, Ph.D.
Ruth M. Kahn, M.S.
Emanuel Kaplan, Sc.D.
Milton L. Laing, M.S.
Louis Lang, M.A.
Ethel A. Martin, M.S.
Roe E. Remington, Ph.D.
Grace H. Sanders, M.S.
Jane Sedgwick, B.S.
Helen R. Stacey, M.A.

Maternal and Child Health Section

William L. Hughes, Ph.D.
Betty Huse, M.D.
Emory W. Morris, D.D.S.
Ruth J. Raattama M.D., M.P.H.
William M. Schmidt, M.D.
Susan P. Souther, M.D., M.P.H.

Public Health Education Section

C. K. Chu, M.D., Dr.P.H.
John E. Farrell, B.A.
Fay M. Hemphill, M.S.P.H.
Alice H. Miller, C.P.H.
Eunice N. Tyler, C.P.H.

Epidemiology Section

Herman C. Mason, Ph.D.

Unaffiliated

Oswald N. Andersen, M.D.
Kenneth A. Easlick, D.D.S.
Lester A. Gerlach, D.D.S.
Allen O. Gruebbel, D.D.S., M.P.H.
Albert D. Kaiser, M.D.
George A. Nevitt D.D.S., M.S.P.H.
Walter J. Pelton, D.D.S., M.S.P.H.
C. Morley Sellery, M.D.
Brig. Gen. James S. Simmons, M.C.
Clifford R. Taylor, D.D.S., M.S.P.H.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Neale M. Atkins, M.D., Graves County Board of Health, Mayfield, Ky., Health Officer

Vernon A. Ayer, M.D., M.S.P.H., 2309 7th Ave., New York, N. Y., Asst. Health Officer, New York City Health Dept.

Willard C. Baker, M.D., 5673 Main St., Williamsville 21, N. Y., Health Officer, Consolidated Health District

Raymond F. Barnes, M.D., 22 North Elm Ave., Webster Groves, Mo., Assoc. Director, Medical Health Service, Mid-Western Area, American Red Cross

F. Wellington Brecker, M.D., 27 Wells Ave., East Hartford, Conn., Health Officer

Dr. Agnes L. Brown, Muhlenberg County Health Dept., Greenville, Ky., Health Officer

Cleaveland Floyd, M.D., 246 Marlborough St., Boston, Mass., Chief Medical Examiner, Tuberculosis Division, Boston Health Dept.

Leonhard F. Fuld, Ph.D., Medical Center, Jersey City 4, N. J., Health Director

Louis E. Harmon, M.D., 2340 Madison Ave., Baltimore, Md., Supervisor, Venereal Disease Clinic, City Health Dept.

William H. Kober, M.D., Box F, Lima, N. Y., Health Officer

Bernard McD. Krug, M.D., County Commissioner of Health, Cortland, N. Y.

Eaton G. Lindner, M.D., 1117 Lake Wier Ave., Ocala, Fla., Director, City-County Health Dept.

S. Easton McManis, M.D., 407 E. Main St., Endicott, N. Y., Health Officer, Village of Endicott

Verlin E. Miles, M.D., 1604 N. Garfield St., Arlington, Va., Asst. Health Officer, Arlington County Health Dept.

Fridgeir Olason, M.D., M.P.H., Harvard School of Public Health, Boston, Mass., Student

Dorothy A. Oppenheim, M.D., 769 Onderdonk Ave., Brooklyn 27, N. Y., Asst. Health Officer, New York City Dept. of Health

A. R. Perry, M.D., M.P.H., Health Dept., Natchez, Miss., Director, Adams County Health Dept.

Robert W. Ripley, M.D., Court House, Pasco Wash., Asst. Health Officer, Benton-Franklin District Health Office

Edward S. Rogers, Bureau of Health, City Hall, Trenton, N. J., Chief Sanitary Inspector

Major Sidney N. Tucker, M.C., Letterman General Hospital, Presidio of San Francisco, Calif., Chief of Communicable Disease Section

Clark H. Yeager, Dr.P.H., 13 Midvale Rd., Baltimore, Md., Chief of Medical Section, Health and Sanitation Div., Office of Coordinator of Inter-American Affairs

Laboratory Section

Lt. Col. Joseph D. Aronson, M.C., Station Hospital, Fort Belvoir, Va., Laboratory Officer, U. S. Army

Leitha D. Bunch, M.A., 635 North Fairview, Lansing 12, Mich., Biochemist, State Dept. of Health

Benjamin W. Carey, M.D., 142 Second Ave., Westwood, N. J., Asst. Director, Lederle Laboratories, Inc.

Philip L. Carpenter, Ph.D., Dept of Bacteriology, Rhode Island State College, Kingston, R. I., Asst. Professor of Bacteriology

Lt. Arthur J. Cohane, Sn.C., 273 Station Hospital, Camp Butner, N. C., Sanitary Officer, U. S. Army

Carl E. Duffy, Ph.D., 106 S. Lansdowne Ave., Lansdowne, Pa., Bacteriologist, Sharp & Dohme, Inc.

Armand Frappier, M.D., 2900 Mt. Royal Blvd., Montreal, Que., Canada, Director, Institute of Microbiology and Hygiene, Univ. of Montreal

Helen H. Gillette, 519 State House, Boston, Mass., Senior Bacteriologist, State Dept. of Public Health

Cpl. Louis J. Grosso, SCU 1941, P. O. Box 651, Tracy, Calif., Laboratory Technician and Water Analyst, U. S. Army

S. David Kramer, Ph.D., State Dept. of Health Labs., Div. of Virology, Lansing 4,

Mich., Assoc. Director, Bureau of Laboratories

Katherine V. Kreidel, Ph.D., 2225 Watson Ave., New York 61, N. Y., Instructor in Physiology, Hunter College

Kathleen D. Muelder, Ph.D., 702 N. Francis Ave., Lansing 12, Mich., Bacteriologist, State Dept. of Health Labs.

John M. Newell, D.Sc., 50 Louder's Lane, Jamaica Plain 30, Mass., Senior Chemist, Massachusetts Antitoxin and Vaccine Lab.

Ruth H. Rose, State Dept. of Health, Lansing, Mich., Bacteriologist

Rebecca L. Shapiro, M.S., 345 E. 17th St., New York, N. Y., Bacteriologist, Foster D. Snell, Inc., Brooklyn, N. Y.

Capt. Ruell A. Sloan, M.C., 2738 Arlington Ave., New York 63, N. Y., Pathologist, U. S. Army

Mathilde Solowey, Ph.D., U. S. Dept. of Agriculture, Chestnut Hill Station, Philadelphia, Pa., Assoc. Bacteriologist, Eastern Regional Research Laboratory

Alfred L. Sotier, M. S., 1532 Biddle Ave., Wyandotte, Mich., Section Head, Research Dept., Wyandotte Chemicals Corp.

George G. Stilwell, M.D., Mayo Clinic, Rochester, Minn., Clinical Pathologist

Frances M. Stoddard, 2512 N.E. Glisan, Portland, Ore., City Bacteriologist, Bureau of Health

Willard F. Verwey, D.Sc., Sharp & Dohme, Inc., Glenolden, Pa., Director of Bacteriological Research, Medical Research Division

Capt. George R. Weber, Sn.C., Station Hospital, Fort Belvoir, Va., Sanitary Officer, U. S. Army

G. Willard Webster, R. D. 3, West Chester, Pa., Bacteriologist, Medical Research Division, Sharp & Dohme Inc.

Capt. Nahum J. Winer, M.C., Hunter Field, Savannah, Ga., Laboratory Officer, U. S. Army

Lucile E. Wirsig, 314 Mountain View Ave., San Bernardino, Calif., Technician, Public Health Laboratory, County of San Bernardino

Vital Statistics Section

Marie Cakrtova, M.D., M.P.H., 3021 North Calvert St., Baltimore, Md., Instructor in Preventive Medicine, Johns Hopkins University Medical School

Engineering Section

Albert N. Aeryns, M.S., 716 Greenwood Ave., Brooklyn, N. Y., Sanitary Engineer, New York City Dept. of Health

Lanham T. Barnard, Box 749, Texarkana, Tex., Sanitation Superintendent, Texarkana-Bowie County Health Unit

George Davidson, 284 College St., Macon, Ga., Public Health Engineer, State Health Dept.

Joseph L. Doyle, 9 Roslyn Court, Roslyn, N. Y., Consultant Engineer, Standard Cap & Seal Corp.

Frank C. Hale, Hq. I Troop Carrier Command, Stout Field, Ind., Sanitary Officer

J. Elliott Hale, M.S., Highland Ave., Winthrop, Me., Acting Director, Div. of Sanitary Engineering, State Bureau of Health

Joseph L. Quinn, Jr., 1098 W. Michigan, Indianapolis, Ind., Acting Director, Div. of Sanitation, State Board of Health

Charles E. Renn, Ph.D., 2 Willard St. Court, Cambridge, Mass., Assoc. Professor of Sanitary Biology, Harvard Univ.

George W. Roddy, 2424 Sixth Ave., San Diego, Calif., Sanitary Engineer, U. S. Army Corps of Engineers

James H. Tillman, 4412 Cambridge St., El Paso, Tex., Sanitary Engineer, El Paso City-County Health Unit

Industrial Hygiene Section

Catherine R. Dempsey, R.N., One Craigie St., Cambridge, Mass., Industrial Nursing Supervisor, Simplex Wire & Cable Co.

Karl L. Dunn, Corning Glass Works, Corning, N. Y., Industrial Hygienist

Lt. Freeman D. Love, M.C., 167 Clinton St., Brooklyn, N. Y.

Hannah L. Peters, M.D., 30 Panoramic Way, Berkeley 4, Calif., Richmond Field Hosp., Richmond, Calif.

Arthur C. Stern, M.S., 55 West 95th St., New York, N. Y., Assoc. Dust Control Engineer, Div. of Industrial Hygiene, New York State Dept. of Labor

Miriam Warner, M.D., Dr.P.H., 21 West School House Lane, Philadelphia, Pa., Physician, Municipal Court

Food and Nutrition Section

Carlton J. Austin, M.S., 15 S. 34th St., Philadelphia 4, Pa., Director of Laboratories, Supplee-Wills-Jones Milk Co.

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Winefred B. Loggans, 863 E. Michigan Ave., Battle Creek, Mich., Home Economics Field Representative, Kellogg Company

Dorothea Nicoll, 10 Montague St., Arlington Heights, Mass., Supervisor of Nutrition, State Dept. of Public Health

Emily K. Stamm, M.S., 28 Gard Ave., Bronx-

ville 8, N. Y., Nutritionist, New York City Health Dept.

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Maternal and Child Health Section

George S. Frauenberger, M.D., 125 Worth St., New York, N. Y., Chief, Division for Physically Handicapped Children, New York City Dept. of Health

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Evelyn M. Rude, M.D., Seminole County Health Unit, Seminole, Okla., Asst. Director

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Dr. Herman Schwarz, 110 East 90th St., New York, N. Y., Pediatrician

Leonard P. Younglao, M.B., M.P.H., Roseau, Dominica, Windward Islands, British West Indies, Health Officer, Government of Dominica

Public Health Education Section

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Margaret Campbell, School of Public Health, Univ. of N. C., Chapel Hill, N. C., Student

Raymond F. Clapp, 212 E. Jefferson St., Falls Church, Va., Assoc. Director, Social Protection Division, Federal Security Agency

May Clark, 30 Chestnut St., Lewiston, Pa., Exec. Sec., Mifflin County Tuberculosis Society

Florence L. Cochrane, R.N., 115 Stuyvesant Place, St. George, S. I., N. Y., Exec. Sec., Staten Island Tuberculosis and Health Committee

Helen M. Donderewicz, D.H., 138 Chestnut St., Albany 6, N. Y., Dental Hygienist, State Health Dept.

Mary A. Eagan, M.A., R.N., 737 S. Wolcott Ave., Chicago, Ill., Director, Public Health Education, Cook County Public Health Unit

Willard C. Fleming, D.D.S., College of Dentistry, Univ. of Calif., San Francisco, Calif., Dean

Claudia B. Galiher, 1629 Montague St., N.W., Washington 11, D. C., Research & Exhibits, District of Columbia Tuberculosis Assn.

Edward J. Hall, 5015 Noyes Ave., Charleston 4, W. Va., Venereal Disease Educational Consultant, State Health Dept.

George T. Harding, M.D., 463 East Town St., Columbus, Ohio, Member, Health Council, Council of Social Agencies

Helen G. F. Hutton, 62 Montague St., Brooklyn, N. Y., Field Worker, Neighborhood Health, Inc.

Marguerite E. Kempf, R.N., 119 Walsh Rd., Lansdowne, Pa., Asst. Supervisory Nurse, Atlantic Seaboard Agency Workers Health Assn.

Urania Rauter, City Hall, Room 613, Milwaukee, Wis., Lecturer on Social Hygiene, Milwaukee Health Dept.

Alice Saar, 447 Belmont Ave., Chicago, Ill., Director, Medical Division, Chicago Welfare Administration

Andre Sam, M.D., Hospital St. Nicolas, St. Marc, Haiti, West Indies, Health Officer, Medical and Sanitary District of St. Marc

M. Alexine Tanner, 1228 Fairmont St., N.W., Washington, D. C., Asst. Health Education Secretary, District of Columbia Tuberculosis Assn.

Public Health Nursing Section

Elizabeth Albrecht, 971–1st Ave., New York 29, N. Y., Supervisor of East Harlem Center, Henry Street Visiting Nurse Service

Gladys J. Aspblom, R.N., Post Rd., Darien, Conn., Nurse Director, Darien Public Health Nursing Assn.

Grace M. Beers, R.N., 307 N. Bedford St., Georgetown, Dela., Supervisor of Nurses, State Board of Health

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Belle Blackwell, R.N., Harris County Health Unit, Houston, Tex., Supervising Nurse

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Jean C. Doyle, Box 102, Rumford, Me., Field Nurse, State Bureau of Health

Gesine A. Franke, Box 374, Huntingdon,

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Elizabeth M. Moore, Meharry Medical College, Nashville, Tenn., Instructor & Coordinator of Health Education

Anne P. Nolan, 114 Webster Ave., Goshen, N. Y., Supervising Public Health Nurse, Orange County Public Health Committee

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Jeanette B. Vroom, M.A., Lincoln Highway, Rt. 2, Wrightsville, Pa., Nursing Consultant, American Red Cross Nursing Service

Gladys G. Weber, Strawtown Rd. & Demarest Ave., West Nyack, N. Y., Public Health Nurse, Rockland County Public Health Nursing Service, State Dept. of Health

Epidemiology Section

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Elizabeth J. Martinelli, Oakland Health Dept., Oakland, Calif., Deputy Registrar of Vital Statistics

Mary E. Pillsbury, M.A., R.N., 5 Prospect Place, New York 17, N. Y., Nurse and Writer

Major Leo V. Schneider, M.C., 206 Berkeley Place, Brooklyn, N. Y., Post Surgeon's Office, Army of the U. S.

James K. Shafer, M.D., M.P.H., 15397 Cherrylawn Ave., Detroit 21, Mich., Venereal Disease Control Officer, Wayne County Health Dept.

Hugh H. Smith, M.P.H., The Rockefeller Foundation, 49 W. 49th St., New York, N. Y., Staff Member, International Health Division

School Health Section

Rose C. Boyer, M.D., 16 W. 77th St., New York, N. Y., Supervising School Physician, N. Y. City Dept. of Health

Vera H. Brooks, M.A., R.N., N. J. State Teachers College, Newark, N. J., Instructor in Health Education

Mattie J. Bullard, M.D., 524 Garfield, Gary, Ind., Acting Director, Dept. of Medical Inspection, Gary Public Schools

Alice E. Butler, M.D., 270 Commonwealth Ave., Boston, Mass., School Physician

Darell B. Harmon, Ph.D., 503 W. 25th St., Austin, Tex., Asst. Director, Maternal and Child Health, State Dept. of Health

Dorothy M. LaSalle, M.A., U. S. Office of Education, Federal Security Agency, Washington, D. C., Specialist in Physical Fitness

Donald I. Minnegan, M.A., 1111 Lexington Bldg., Baltimore, Md., Acting State Director of Physical Education and Recreation, State Dept. of Education

Regine K. Stix, M.D., 120 Riverside Drive, New York 24, N. Y., Supervising School Physician, Vocational High School Service, N. Y. City Health Dept.

Marguerite Vollmer, M.A., 114 East 52nd St., New York, N. Y., Health Teacher, Oceanside High School

Dental Health Section

Henry T. Ellison, D.D.S., M.S.P.H., 240 W. 102nd St., New York, N. Y., Supervising Dentist, Children's Aid Society

Hester K. Nicoles, R.N., 211 Richards St., Joliet, Ill., Supervisor of Health Service, Joliet High School & Junior College

Leo Remes, D.D.S., 4125 Bell Ave., Bayside, L. I., N. Y., Health Officer in Training, N. Y. City Health Dept.

Unaffiliated

John C. Bugher, M.D., Rockefeller Foundation, 49 W. 49th St., New York, N. Y., Staff Member

Lawrence K. Frank, 72 Perry St., New York 14, N. Y., Executive Secretary, Mayor's Committee on Medical Care

Charles L. Newberry, M.D., 119 Walsh Rd., Lansdowne, Pa., Surgeon (R), U. S. Public Health Service

Walter G. Nord, 144 Spring St., Amherst, Ohio, Member, Lorain County Health Board

Herbert L. White, 108 Broadway, Hornell, N. Y., City Sanitarian, City Dept. of Health

RESOLUTIONS

The following Resolutions were unanimously adopted by the Association at the Seventy-second Annual Meeting in New York, N. Y., October 12–14, 1943.

1. APPRECIATION

TO DR. STEBBINS AND THE LOCAL COMMITTEE

RESOLVED that the American Public Health Association express its grateful appreciation to the New York Local Committee and to the agencies and individuals represented thereon.

RESOLVED that the thanks of the officers and members be extended to Dr. E. L. Stebbins, Health Commissioner of New York and General Chairman of the Local Committee, and to the chairmen and members of the several subcommittees whose services have contributed so markedly to the success of the Wartime Conference and Seventy-second Annual Business Meeting.

TO THE NEW YORK CITY AND NEW YORK STATE HEALTH DEPARTMENTS AND HEALTH COMMISSIONERS OF NEW JERSEY AND CONNECTICUT

RESOLVED that the American Public Health Association express its thanks to the New York City Health Department and the New York State Health Department, to the Commissioner of Health of New Jersey, and to the Commissioner of Health of Connecticut for their valuable assistance in the conduct of this Annual Meeting.

TO THE NEW YORK CONVENTION AND VISITORS BUREAU AND TO THE HOTEL PENNSYLVANIA

RESOLVED that the American Public Health Association express its thanks to the New York Convention and Visitors Bureau and to the Hotel Pennsylvania for their cooperation in making such excellent facilities available for the Seventy-second Annual Business Meeting.

TO COÖPERATING AGENCIES

RESOLVED that the American Public Health Association express its grateful appreciation to the Public Health Association of New York City, to the National Health Council agencies, to the National Health Library, and to the National Publicity Council for their excellent assistance in the conduct of this meeting.

TO THE PRESS AND RADIO

RESOLVED that the American Public Health Association acknowledge its indebtedness to the press and radio, national, state, and local for its service in connection with the Wartime Conference.

TO EXHIBITORS

RESOLVED that the American Public Health Association express its grateful appreciation to its friends and coöperators who have presented at its Wartime Conference and 72nd Annual Business Meeting the excellent exhibits which are of such great interest and value.

2. IN MEMORIAM

RESOLVED that it is with a sense of irreparable loss that the American Public Health Association records, since its last Annual Meeting, the death of 48 Fellows and members, the names of whom constitute a part of this resolution.

J. S. Abbott, Washington, D. C., Elected Member 1925, Fellow 1929.

John W. Alvord, Chicago, Ill., Elected Member 1899, Charter Fellow 1922.

Theodore V. Bauer, M.D., Buffalo, N. Y., Elected Member 1924.

Richard P. Borden, Fall River, Mass., Elected Member 1920.

Clarence N. Boynton, Phoenix, Ariz., Elected Member 1916, Fellow 1935.

Richard M. Bradley, Boston, Mass., Elected Member 1920.
James M. Brannon, Ph.D., Urbana, Ill., Elected Member 1929.
Alice G. Bryant, M.D., Boston, Mass., Elected Member 1921, Fellow 1923.
E. G. Buckland, New Haven, Conn., Elected Member 1920.
Loneta M. Campbell, R. N., Cincinnati, Ohio, Elected Member 1934, Fellow 1938.
Thomas E. Camper, M.D., Corunna, Mich., Elected Member 1936.
Horton R. Casparis, M.D., Nashville, Tenn., Elected Member 1941.
D. N. Cone, M.D., Jasper, Fla., Elected Member 1937.
C. B. Crittenden, M.D., Louisville, Ky., Charter Fellow 1923.
Donald E. Cummings, Denver, Colo., Elected Member 1935, Fellow 1941.
Lt. Col. Joseph M. Curry, V.C., Keesler Field, Miss., Elected Member 1937, Fellow 1942.
Courtenay Dinwiddie, Irvington-on-the-Hudson, N. Y., Elected Member 1916, Charter Fellow 1922.
Warren F. Draper, Jr., M.D., Paris, Tex., Elected Member 1942.
John W. Elder, M.D., Albuquerque, N. M., Elected Member 1940.
A. Grant Fleming, M.D., D.P.H., Montreal, Can., Elected Member 1920, Fellow 1939.
Hubert Flurry, M.D., Booneville, Miss., Elected Member 1942.
Harry Goldman, M.D., M.P.H., Boston, Mass., Elected Member 1924.
S. S. Goldwater, M.D., New York, N. Y., Elected Member 1902, Charter Fellow 1922.
J. K. Gore, Orange, N. J., Elected Member 1921.
Hazel M. Hatfield, M.D., New York, N. Y., Elected Member 1920.
Marvin F. Haygood, M.D., West Point, Ga., Elected Member 1918, Fellow 1938.
Charles R. Hoover, Ph.D., Middletown, Conn., Elected Member 1930.
James E. Ives, Ph.D., Washington, D. C., Elected Member 1932.
Martin H. Knutsen, M.S., State College, Pa., Elected Member 1919.
A. T. McCormack, M.D., Louisville, Ky., Elected Member 1919, Charter Fellow 1923.
Harry B. Meller, Pittsburgh, Pa., Elected Member 1930.
Howard B. Mettel, M.D., St. Louis, Mo., Elected Member 1936, Fellow 1939.
Sir Arthur Newsholme, Worthing, Sussex, England, Honorary Fellow 1931.
Theodore F. Pappe, Buffalo, N. Y., Elected Member 1940.
Dr. Mosby G. Perrow, Lynchburg, Va., Elected Member 1908, Charter Fellow 1922.
Ruth Ogden Pierson, East Orange, N. J., Elected Member 1917.
Blanche Potter, New York, N. Y., Elected Member 1923.
Frank C. Rainier, Whittier, Calif., Elected Member 1940.
Paul D. Robason, M.D., McKinney, Tex., Elected Member 1942.
William J. Ryan, M.D., Pomona, N. Y., Elected Member 1934.
Fred C. Spalding, Valley City, N. D., Elected Member 1939.
J. F. X. Stack, M. D., Hoboken, N. J., Elected Member 1923.
William Thau, M.D., Boston, Mass., Elected Member 1937.
Arthur H. Thomas, Philadelphia, Pa., Elected Member 1913.
Leslie T. Webster, M.D., New York, N. Y., Elected Member 1935, Fellow 1940.
Robert S. Weston, Boston, Mass., Elected Member 1896, Charter Fellow 1922.
LeRoy A. Wilkes, M.D., Trenton, N. J., Elected Member 1919.
Frank A. Williams, M.D., Lake Providence, La., Elected Member 1936.

3. Distribution of Public Health Nursing Personnel

WHEREAS, the nursing division of the Procurement and Assignment Service of the War Manpower Commission has developed principles and objectives which seem desirable for the proper utilization of public health nursing personnel, and

WHEREAS, the success of the application of these principles depends upon the understanding and support of health agencies and of the public, therefore be it

RESOLVED that the American Public Health Association recommend that health departments and public health nursing agencies take an active part in assisting local nursing committees of Procurement and Assignment to obtain equitable distribution of nursing personnel in ways best suited to local situations and to gain public understanding and support of this distribution.

4. Personnel Policy During the Emergency

WHEREAS, it is essential that practical action be taken by state and local health departments to meet the personnel shortage during the war emergency, and

WHEREAS, the American Public Health Association Committee on Professional Education has prepared a statement on this problem

which was published in Volume 33, No. 7, July, 1943 issue of the *American Journal of Public Health* which suggests a solution of the problem without jeopardizing future qualifications of permanent public health personnel, therefore be it

RESOLVED that the American Public Health Association recommend this published statement as a guide to personnel policy during the war emergency.

5. LABORATORY SUPPLIES AND EQUIPMENT

WHEREAS, state and all other public health laboratories are encountering increasingly serious difficulties in the procurement of supplies and equipment essential to their effective functioning, without which the provision of adequate safeguards for the public health is impossible; and recognizing that the current health hazards are increasing because of the intensity and extent of the war effort, therefore be it

RESOLVED that the American Public Health Association request the proper authority to designate The United States Public Health Service as a claimant agency, subject to the organization's willingness so to serve, with due recognition and authority under War Production Board regulations, to insure that supplies and equipment essential for laboratory purposes be made available to the extent necessary to overcome these difficulties.

6. DIVISION OF INDUSTRIAL HYGIENE IN THE DEPARTMENT OF LABOR

WHEREAS, it appears that there has been introduced into Congress a Bill (H.R. 2800) which proposes an extension of the activities of the Department of Labor by creating therein a division of industrial hygiene, and

WHEREAS, it further appears that the creation of such a division of industrial hygiene in the Department of Labor would duplicate the activities already provided for in the U. S. Public Health Service for this purpose and furthermore would tend to interfere in similar services carried out in the various states and the health departments now therefore be it

RESOLVED that the American Public Health Association hereby declare itself as opposed to such legislation, and be it further

RESOLVED that a copy of this resolution be forwarded to the committees of Congress that have this matter before them.

7. PAN AMERICAN HEALTH DAY

WHEREAS, the second of December has been declared Pan American Health Day by official proclamation of the Governments of all the American Republics, and

WHEREAS, this Inter-American celebration has assumed increasing importance in the different countries of the Western Hemisphere, therefore, be it

RESOLVED that the Executive Board urges all members of the American Public Health Association to lend their fullest coöperation in order that this day may be endowed with even greater significance from the standpoint of Hemispheric solidarity and the promotion of health, and especially urge such members as occupy responsible positions either in health departments or scientific institutions to place themselves in touch with the Pan American Sanitary Bureau so that they may coöperate in an effective and practical manner in this enterprise.

DECEASED MEMBERS

Courtenay Dinwiddie, New York, N. Y., elected Member 1916, Charter Fellow 1922, Maternal and Child Health Section.

J. Leake, M.D., Portsmouth, Va., Elected Member 1933, Health Officers Section.

Thomas A. Storey, M.D. Stanford University, Calif., Elected Member 1912, Charter Fellow 1922, Life Member 1932, Maternal and Child Health Section.

Hassow Von Wedel, M.D., New Rochelle, N. Y., Elected Member 1915, Charter fellow 1922, Laboratory Section.

EMPLOYMENT SERVICE

The Association Employment Service seeks to bring to the attention of appointing officers the names of qualified public health personnel and to act as a clearinghouse on employment. This is a service of the Association conducted without expense to the employer or employee.

From the registry of persons available, selected announcements are published from time to time. Appointing officers may obtain lists of all registrants on request.

Address all correspondence to the Employment Service, American Public Health Association, 1790 Broadway, New York 19, N. Y.

POSITIONS AVAILABLE

Physician: public health pediatrics. To assist director of maternal and child health in large California county health department. Major duties, conducting of infant and preschool health conferences and school examinations. Beginning salary $350 and travel allowance. California license required. Training and experience in pediatrics or public health or both. Immediately available. Address William C. Buss, M.D., Kern County Health Department, Bakersfield, Calif.

Wanted: A physician trained in tuberculosis to assume administrative control of the Bureau of Tuberculosis in an eastern city of 200,000 population. Salary $3,900–$4,500 plus cost of living adjustment. Address **Box B,** Employment Service, A.P.H.A.

Sanitarian wanted: Preferably with Bachelor's degree or engineering degree, plus public health experience or training. Must have own car. Applicant with lower qualifications will be offered an opportunity to take a short, free indoctrination course. Salary $1,920 per year with travel allowance of $50 per month, if qualified. Apply Dist. Dept. of Health, No. 6, Central Office, Newberry, Mich., Dr. Franklin.

Wanted: Pediatrician to supervise medical care of children at cerebral palsy center being established by private institution in coöperation with Illinois Division of Services for Crippled Children. Salary commensurate with experience and training. For further information write Lawrence J. Linck, Director, Division of Services for Crippled Children, 1105 So. Sixth St., Springfield, Ill.

The Department of Health, New Jersey, whose industrial health activities have expanded rapidly during the present war, has announced its need for two full-time industrial hygiene physicians for its Industrial Hygiene Service. As one of the leading states in the production of war materials, New Jersey offers unusual opportunities for gaining experience in occupational disease control besides giving the physician a chance to make a valuable contribution to the war effort. The principal duties of the selected physicians will be consultations in regard to the following: control of occupational diseases; industrial toxicological problems; evaluation of adequacy of plant medical services; promotion of measures which will reduce absenteeism from non-occupational causes; and conduct of industrial health education activities. Physicians interested in these positions should write to the Department of Health, Trenton, N. J.

Merit System for Personnel Administration in Delaware will set examinations for 3 positions in the Delaware State Board of Health shortly. The positions open for examination, together with the beginning salaries, are: Deputy State (County) Health Officer ($3,800), Pediatrician ($3,600), and Medical Social Consultant ($2,400).

These examinations will be unassembled, but successful candidates will be expected to appear in Delaware for an oral interview which will be a weighted part of the examination. Appointments may be expected soon after the examinations are conducted.

Information and specifications as prepared for each position may be secured by communication with the Merit System Supervisor, P. O. Box 1911, Wilmington, Del., and application for examination must be made on the official form.

The Milwaukee Health Department is interested in obtaining an instructor in hospital nursing to conduct a student educational program in its communicable disease hospital. Salary offered begins at $125 per month with maintenance, and increases of $5 per month each year until $135 has been reached. To this basic salary there has been added a cost of living bonus of $30.64 per month, making the total beginning salary $155.64 plus

maintenance. Apply to Dr. G. F. Burgardt, Deputy Commissioner of Health, Milwaukee, Wis.

Wanted: Public health physicians in Texas. George W. Cox, M.D., State Health Officer, Austin, Tex.

Wanted: Public health statistician for large California County Health Department. College degree with training in statistics. Salary $200. Position open. Address William C. Buss, M.D., Kern County Health Dept., Bakersfield, Calif.

Hawaiian Territorial Board of Health seeks trained engineer to supervise rodent plague control program. Salary range from $331.67 to $398.33 per month subject to retirement deductions plus bonus. Position under Territorial civil service system with classification of P-4. For further details address A.P.H.A. Employment Service.

Wanted: Physical therapist by crippled Children's Division. Should be graduate of a school of nursing or of college, with a major in physical education or science; have completed a course in physical therapy; should have had experience in physical therapy, preferably with children. Write for application blank to Merit System Council, 416 Henry Building, 309 S.W. 4th Ave., Portland 4, Oregon.

Psychiatric case worker desired for mental hygiene clinic, Department of Health, Peoria, Ill.

Senior Sanitarian, Alaska Health Department. Minimum requirements 2 years college, 6 months public health course, 2 years' experience. Two additional years' experience acceptable instead of each year college. Monthly salary $235–$265. Mary B. Pool, Alaska Merit System, Juneau.

FOR OTHER POSITIONS AVAILABLE WRITE EMPLOYMENT SERVICE, AMERICAN PUBLIC HEALTH ASSOCIATION, 1790 BROADWAY, NEW YORK 19, N. Y.

In view of the current active demand for trained and experienced persons in public health, it is suggested that prospective employers communicate directly with the Employment Service, American Public Health Association, 1790 Broadway, New York 19, N. Y., for up-to-date lists of applicants.

POSITIONS WANTED

Administrative

Physician, age 37, M.D. Iowa, Dr.P.H. Harvard, specializing in tuberculosis, seeks position as medical director of a sanatorium or a state bureau of tuberculosis. Exempt from military service. **A-476**

Physician, M.D. Yale, with private practice industrial medicine. Age 39 and draft exempt. Seeks opportunity as public health physician. **A-405**

Woman physician, well prepared in pediatrics. M.S.P.H. DeLamar Institute, Columbia University 1943, seeks employment in field of maternal and child health, preferably administrative in pediatrics. Excellent references. **A-507**

Physician, M.D. University of Arkansas, M.P.H. Harvard, experienced as county health officer. Age 35. Will consider position as county or city health officer or director of a bureau. **A-506**

Physician, age 28, M.D. Yale, trained in pediatrics, now county health officer of southern state, seeks administrative position in northeastern United States. **A-509**

Woman physician, age 35, M.D. University of Minnesota, 2 years' experience as county health officer, seeks clinical or administrative position, preferably South. **A-510**

Health Education

Woman with background of health education and public health nursing, experienced as teacher, supervisor, and writer, seeks teaching position of responsibility. **H-507**

Laboratory

Research bacteriologist. Unusually trained and experienced woman bacteriologist and serologist now occupying responsible position in state laboratory seeks research work of permanent character. **L-468**

Water chemist, bacteriologist, M.S. degree in Sanitary Chemistry. Age 36, draft exempt. Eight years' experience in state laboratory working on water, milk and sewage. Prefers Midwest or Pacific Northwest location. **L-469**

NEWS FROM THE FIELD

RESOLUTIONS ADOPTED BY THE LATIN AMERICAN DELEGATES TO THE INTER-AMERICAN CONFERENCE ON HEALTH EDUCATION HELD AT THE TIME OF THE 72ND ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION IN NEW YORK CITY, OCTOBER 11, 1943.

I

The delegates attending the First Conference on Health Education hereby express their gratitude to the Pan American Sanitary Bureau in Washington and to the Institute of Inter-American Affairs for having sponsored this Meeting, which will mark an important step in the coöperative program for the improvement of health conditions in the Americas. The Delegates also wish to express their gratitude to the American Public Health Association for having included this Conference in its 72nd Annual Meeting.

II

The Conference on Health Education also passed a resolution commending all those persons in the countries of America who are working to create a general health consciousness among the inhabitants of the Western Hemisphere, urging them to coördinate their work for more effective results.

III

The Conference on Health Education, having been informed of the effective work being done by the Governments of the American countries in behalf of health education, adopted a special resolution to recommend that this work be based upon the modern technical methods which experience has demonstrated to be useful in this activity.

IV

The Conference on Health Education expressly declares that health education should be made an integral part of public education and that, consequently, the teachers should be properly instructed so that they can perform these duties. This instruction should be given in the Institutes and Health Schools already established, or in other appropriate institutions. It is also recommended that this matter be discussed at the forthcoming meeting of the Health Teachers of America to be held in Ann Arbor. The papers contributed by several delegates to the Conference are referred to said meeting of the Health Teachers of America for deliberation.

V

Since health education is fundamentally necessary for the effective progress of hygienic practices among the people, the Conference on Health Education recommends that an Inter-American Conference on this subject be held in one of the Latin American capitals; and in consequence, it requests the Pan American Sanitary Bureau and the Institute of Inter-American Affairs, in pursuance of their customary policy and with the assistance of the respective governments, to organize such a conference. The Conference on Health Education believes that in this manner the progress made in social security, and the affirmation of the principles set forth in the Atlantic Charter will be secured. Therefore, as the last act of its deliberations, it urges that this conference be organized and held.

NEW COURSE IN HEALTH EDUCATION FOR LATIN AMERICANS

Arrangements have been completed between the University of California and the Institute of Inter-American Affairs to establish a special course in Health Education to meet the particular requirements of students from Latin America. This course will begin on March 1, 1944. Students who require English instruction will be urged to come to this country not later than December 10, 1943, so that they may have time to secure the necessary instruction. The course in English will be specially planned to deal with the vocabulary which will be used in the later course in Health Education and will serve also as an orientation course. During the preliminary training period, it is expected that selected students may have an opportunity to attend other courses in the University which will assist them in later studies in Health Education.

The Health Education course will be given in the newly established School of Public Health, which is under the direction of Walter H. Brown, M.D., who has had a long experience in the United

States and abroad in public health administration and health education. It will include training in the principles of public health and hygiene, and in the principles of education, particularly as these apply to conditions in South and Central American countries and the health work of the C.I.A.A. in those areas. Arrangements are being made to appoint one or more experienced public health administrators from Latin America to serve temporarily on the faculty so that their experience will be available to assure that instruction is given in accordance with the needs arising out of the particular conditions in various countries.

All applicants must give evidence of their intention to undertake service in public health or in school health work in Latin America after completion of the course.

Classroom instruction will be given on the campus at Berkeley, Calif., after which there will be supervised field training. While in Berkeley, the students will be housed by the International House organization, which has had a long experience in assisting students from Latin America in making their stay in this country pleasant and profitable. In order to assure maximum value of instructional facilities, the class for 1944 will be limited to thirty students.

Applicants for study grants from the Institute of Inter-American Affairs should be between the ages of 30 and 45 years, although consideration will be given to applications from those outside this age group in exceptional circumstances. Individuals with prior training or experience in public health work, school health education, and related fields will be given preference in selection, but others may also apply. Applications will be received from both men and women. Candidates need not be physicians.

Students who are selected for this training by the Institute of Inter-American Affairs will receive monthly stipends adequate to meet their living costs and will be furnished with tuition and transportation from their place of residence to the University of California, and return. Students should not bring their families with them. No funds or accommodations are available for this purpose.

All applications will be made through Chiefs of Party of the Coordinator's Office in each republic in accordance with regulations governing the Institute Training Program, or through the Pan American Sanitary Bureau, Washington, D. C.

TROPICAL MEDICINE AT COLUMBIA-PRESBYTERIAN MEDICAL CENTER, NEW YORK

Dr. Harold W. Brown, Dean of the School of Public Health of the University of North Carolina, has resigned, effective January 1, to assume the Professorship of Parasitology at Columbia University. This appointment marks the beginning of a new program in Tropical Medicine at the Columbia-Presbyterian Medical Center. Dr. Brown is the first member of a faculty for training and research in tropical diseases, which will function under the immediate direction of the DeLamar Institute of Public Health, a division of the Medical School. This program has been made possible by a grant from the Josiah Macy, Jr. Foundation.

U. S. AND AMERICAN REPUBLICS EXCHANGE MEDICAL KNOWLEDGE

The Americas are exchanging medical knowledge as part of a great inter-American health and sanitation program, now under way in seventeen of the other American republics.

In this continental effort to control and reduce the ravages of malaria, tuberculosis, yaws, and other diseases, the United States is contributing technical

and financial assistance through the Institute of Inter-American Affairs, an agency of the Office of Inter-American Affairs.

Many doctors, sanitation engineers and other specialists of Latin America are coming to the United States to study in leading medical schools, for observation and training in public health activities and in special fields of health work.

In turn, United States doctors are finding new opportunities for first-hand study and practical experience in the projects evolving out of the inter-American program, particularly in the campaign against malaria and other tropical diseases.

More than one hundred doctors from Latin America have come to the United States for additional training. In the reversal of this exchange, some thirty United States doctors already have completed training in Central America, where extensive work is being carried on for control of malaria.

Dr. Eugene P. Campbell, of the health and sanitation division of the Institute of Inter-American Affairs, Washington, reports that medical men from the United States are enthusiastic about the training they are receiving in the republics to the south. Dr. Campbell is director of the United States missions assisting Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua in health and sanitation programs.

The training program was established by the Association of American Medical Colleges, with the financial support of the Markel Foundation in New York.

PAN AMERICAN DEMOGRAPHIC COMMITTEE

The first Pan American Demographic Congress which met during October in Mexico City resulted in the formation of a permanent Pan American Demographic Committee to correlate statistics and to study problems connected with immigration and the movement of populations, it was reported in the *New York Times*. The underlying purpose of the Congress was said to have been the formulation of a joint Latin American immigration policy to cope with the pressure of organized groups that are expected to ask the Western Hemisphere countries to open their doors to European immigrants after the war.

Lowell J. Reed, Ph.D., Dean of the School of Hygiene and Public Health of Johns Hopkins University, Baltimore, and Earl G. Harrison, United States Commissioner of Immigration and Naturalization, represented the United States. It was said that the results of the Congress were satisfactory and that they enabled the delegates of the 21 American republics to exchange information and experience.

UNIVERSITY OF BIRMINGHAM, ENGLAND, SEEKS PROFESSOR OF SOCIAL MEDICINE

Dr. George Auden, Birmingham, England, writing recently to Dr. Haven Emerson, describes a grant which the Nuffield Trust has made for a Chair of Social Medicine at the University of Birmingham, the salary at £1,500 may be raised to £2,000.

"I believe strongly that it is probable that a suitable holder of this important chair is more likely to be found on your side of the Atlantic. We have nothing to compare with the Johns Hopkins School of Hygiene in depth and width of training, for in England the teaching of hygiene in our medical schools has been mainly directed towards the Diploma in Public Health— a sine quâ non for a public health appointment, and the training of our medical students has centered round the out-patient and in-patient departments of hospitals with little or no reference to the social factors of environment, temperament, etc., in relation to disease. The advertisements are now being published in our medical papers and applications need not be submitted (with three references) before the 1st of March, 1944. I hope you will let this be known amongst the medical schools. It might tempt some pioneer enthusiast. The chair offers such splendid opportunities and should be held by a man

of real originality and distinction if it is to be a real success. Unfortunately our clinical colleagues find it hard to see what is meant by 'social medicine.' They will tend to look for a clinician rather than for a bio-sociologist. Particulars can be obtained from the Secretary of the University, C. G. Burton, Edmund Street, Birmingham 3."

DR. SHOPE AWARDED JOHN SCOTT MEDAL

The award of the John Scott Medal to Dr. Richard E. Shope of the staff of the Rockefeller Institute for Medical Research, New York, N. Y., has been announced in recognition "of his discovery of the complex etiology of swine influenza."

RHEUMATIC FEVER REPORTABLE IN MARYLAND

By an action of the Maryland State Board of Health on September 23, rheumatic fever and rheumatic heart disease were made reportable, according to an announcement released by Robert H. Riley, M.D., the Director of the State Department of Health.

CHILDREN'S BUREAU CONFERENCE ON RHEUMATIC FEVER

A conference called by the Children's Bureau met in Washington early in October to discuss the problems related to rheumatic fever. About 100 persons attended who were told that special services for children with rheumatic fever are now financed through 13 official state agencies, with funds appropriated by the Children's Bureau for this purpose. More than 3,600 children had visited clinics for this purpose during the last year.

According to the press, Dr. Martha M. Eliot, Associate Chief of the Children's Bureau, spoke favorably of the use of the sulfonamide drugs in protecting children from recurrent attacks of rheumatic fever and prolonging their lives. According to Brigadier General Hugh J. Morgan, Consultant in Medicine, Office of the Surgeon General, U. S. Army, only one-third of the service men who develop or have been discovered to have had rheumatic fever can be salvaged to the point where they can carry on effectively in the Army. He urged civilian health authorities "to follow the lead of the Army and Navy in steps to combat the disease."

TENNESSEE DIVISION OF VITAL STATISTICS COÖPERATES WITH LOCAL RATIONING BOARDS

A coöperative program for the exchange of certain information concerning births and deaths has been developed between the Tennessee Office of Price Administration and the Tennessee Department of Public Health. This program consists of furnishing to local War Price and Rationing Boards lists of births and deaths registered with local registrars of vital statistics. In turn, the local War Price and Rationing Boards furnish the local registrars with lists of persons whose ration books have been returned on account of death.

According to Don C. Peterson, M.D., State Registrar of Vital Statistics, this plan accomplishes the following purposes:

1. It prevents the fraudulent securing of ration books for infants.
2. Prevents the issuance of duplicate ration books for infants.
3. Assists local War Price and Rationing Boards in securing the surrender of ration books of persons who have died.
4. Promotes a more prompt and complete registration of all births and deaths in the State of Tennessee.
5. The local War Price and Rationing Boards receive through local registrars of vital statistics an official confirmation of births and deaths reported in their respective jurisdictions at regular intervals.

This plan has been in operation in Tennessee with satisfactory results since January 1, 1943. Apparently the success of the plan is due largely to the fact that all work is carried out at the local level with a minimum delay to the

public. Parents may secure ration books for the new baby in a matter of an hour or so, if desired, as all the necessary persons are in the immediate vicinity and are readily available. There are no fees involved and no additional requirements imposed on the public. Prior to the inauguration of this program, the local War Price and Rationing Boards had no source of information on deaths other than newspaper items or hearsay evidence. Consequently, a very small proportion of ration books of deceased persons were being surrendered. The program has very materially altered this situation and it is the impression that these books are now being surrendered promptly on receipt of a notice from the Board. The improvement in birth registration has been most marked. At the present time approximately 25 per cent more birth certificates are being filed than for the same period in previous years. Not all of this increase can be attributed to an increase in the actual number of births occurring in the state. In addition to improvement in birth registration, more complete information is becoming available concerning unreported deaths. This information is being used by the local registrars in improving death registration.

LABORATORY TRAINING FELLOWSHIPS

The W. K. Kellogg Foundation has granted ten fellowships to the Maryland State Department of Health for the training of qualified students in clinical and public health laboratory work, according to R. H. Riley, M.D., Director, Maryland State Department of Health. Training in clinical laboratory work will be at the Union Memorial Hospital School of Medical Technology or at the University of Maryland Hospital, both located in Baltimore. Training in public health laboratory methods will take place in the central laboratories of the Bureau of Bacteriology of the State Department of Health. The entire course will cover a full 12 months of training. Only students who have completed their basic training at an accredited college or university, or those who will be eligible for a bachelor's degree upon satisfactory completion of this course, can be granted fellowships.

Fellows who satisfactorily complete this training course will be qualified in both public health and clinical laboratory work. In addition to their bachelor's degree, they will have had a year's experience along with their special training, so that they can meet the requirements for Junior Assistant or Senior Assistant Bateriologists (or serologists) as recently prescribed by the American Public Health Association. They will also have absolved the qualifications for medical technologists as established by the American Society of Clinical Pathologists. Graduates will be qualified, therefore, to accept positions in public health or clinical laboratories and should be especially qualified for positions in medico-public health laboratories such as are developing in Maryland, where both types of training are essential.

NEW SCHOOL HEALTH SERVICE DAILY-MONTHLY REPORT

The National Organization for Public Health Nursing, New York, N. Y., has released a new School Health Service Daily-Monthly Report Form after a trial period of four years. The report may be used by the nurse doing school work as a part of the generalized program, as well as by the specialized school nurse, and is designed to show both quality and scope of service.

UTAH PUBLIC HEALTH ASSOCIATION

The Utah Public Health Association met in Salt Lake City September 25 under the Presidency of William M. McKay, M.D., State Health Commissioner. The program items included

Industrial Hygiene of the Army, Army Borne Tropical Diseases, the problems of maternal mobidity and studies in poliomyelitis, among others.

New officers elected were as follows:

President for the ensuing year: H. L. Marshall, M.D.
President-elect, E. H. Bramhall.
Vice President, D. Keith Barnes, M.D.
Secretary, Elmer B. Quist.
Treasurer, Dorothy Lowman.
Directors, Verna Peterson and Howard M. Hurst.

Meeting jointly with the Utah Public Health Association were the Utah Public Health Nurses Association and the Utah Sanitarians Association.

SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION

The South Dakota Public Health Association met in Huron on September 21 under the Presidency of G. L. Hickman, M.D. Gilbert Cottam, M.D., is the Secretary-Treasurer and Superintendent of the State Board of Health.

CHANGES IN OCD SANITARY ENGINEERING STAFF

George Baehr, M.D., Chief Medical Officer of the Office of Civilian Defense, Washington, D. C., has announced the following changes in the sanitary engineering staff of the Medical Division, Office of Civilian Defense.

LINDON J. MURPHY, who has been Director of Engineering Extension Service, Iowa State College, Ames, Ia., has been commissioned in the U. S. Public Health Service Reserve and assigned as Regional Sanitary Engineer in the 7th Region in Omaha, Neb.

WILLIAM T. INGRAM, who has been Assistant Regional Sanitary Engineer with headquarters in San Francisco, has been promoted to the position of Regional Sanitary Engineer, succeeding Gerald E. Arnold who has been assigned to the San Francisco district of the War Production Board. Mr. Ingram formerly was sanitary engineer of the San Joaquin local health district, Stockton Calif. He received the M.P.H. degree from Johns Hopkins in 1942.

JOHN C. LUTHIN, recently on the staff of the Kaiser Company, Richmond, Calif., has been commissioned in the U. S. Public Health Service Reserve and assigned to succeed Mr. Ingram as Assistant Regional Sanitary Engineer in San Francisco.

HUGH R. MCCALL, Regional Sanitary Engineer with headquarters in Baltimore, has been transferred to the Central Office of the OCD in Washington as Assistant Chief Sanitary Engineer in the Medical Division.

Succeeding Mr. McCall, WARREN H. BOOKER, Director of the Division of Sanitary Engineering of the North Carolina State Board of Health for the last 12 years, has been commissioned in the Public Health Service Reserve and assigned to Baltimore.

AMOS J. ALTER, a member of the Central Office staff of the OCD for the past year, has been transferred to the office in Dallas, Tex., as Assistant Regional Sanitary Engineer.

LATIN AMERICAN VISITORS AT THE 72ND ANNUAL MEETING, A.P.H.A.

More than 70 visitors from Latin American countries attended the recent Annual Meeting of the American Public Health Association, many of them guests of the Pan American Sanitary Bureau and the Office of the Coördinator of Inter-American Affairs. Some currently are students in American universities. Included in the list were the following:

ARGENTINA: Dr. Luis M. Barreiro
Dr. Alfredo Sordelli
Dr. Alberto Zwanck

BOLIVIA: Dr. Felix Veintemillas
Dr. Carlos Ferrufino

BRAZIL: Dr. Jesuino Albuquerque
Dr. Paulo do Amaral-Pamplona
Dr. Olympio da Fonseca
Mr. Jose Franco-Henriques
Dr. Vasco de Freitas-Barcellos

Dr. Abelardo Marinho
Dr. Egberto Prochat de Assis
Dr. Orlando Rodrigues da Costa
Mr. Marcello Teixeira-Brandao
Dr. G. H. de Paula Souza
Dr. Silvio de Sao Paulo

CHILE: Dr. Marcos Charnes
Dr. Mario Pizzi
Dr. Mario Prado-Lefort
Dr. Francisco Rojas
Dr. Hernan Romero

COLOMBIA: Mr. Prospero Ruiz

COSTA RICA: Dr. Fernando Guardia
Dr. Julio C. Ovares
Mr. Rodrigo A. Vargas

CUBA: Dr. Moises Chediak
Dr. Pedro Machada
Mr. Raoul F. Cowley
Dr. Guillermo Lage y Fernandez
Dr. Felix Hurtado
Dr. Domingo F. Ramos
Dr. Alberto Recio

DOMINICAN REPUBLIC: Mr. Salvador Sanlley

ECUADOR: Mr. Cesar A. Ribadeneira
Dr. J. A. Montalvan

EL SALVADOR: Dr. Alberto Aguilar-Rivas
Mr. Francisco Sequeira
Mr. Roberto Vargas

GUATEMALA: Dr. Enrique Padilla
Mr. Julio Montano
Dr. Epaminondas Quintana

HONDURAS: Mr. Jorge E. Zepeda

MEXICO: Dr. Salvador Acosta-Baylon
Dr. Joaquin Alvarez de la Cadena
Dr. M. A. Alarcon
Dr. Alfonso Alarcon-O'Farrill
Dr. Amado Alarcon-O'Farrill
Dr. Luis de Alba-Luva
Dr. Luis Benitez-Soto
Dr. Salvador Gonzalez-Reynoso
Dr. Victor Ocampo-Alonzo
Dr. Federico Ortiz
Dr. Alfonso Segura-Albiter
Dr. Salvador Iturbide-Alvirez
Dr. Miguel E. Bustamante
Dr. Mario Quinones
Dr. Gustavo Uruchurtu

NICARAGUA: Dr. Carlos Amaya
Dr. Arturo Rodriguez R
Dr. Manuel A. Sanchez-Vigil

PANAMA: Dr. Benigno Angulo
Dr. A. Gonzalez-Revilla

PARAGUAY: Dr. Justino Almiron
Dr. Arturo Jose Buzarquis
Dr. Cesar Enrique Guggiari
Dr. Mariano Antonio Molas
Dr. Raul Pena

PERU: Dr. Gregorio B. Hernandez
Miss Elsa Paredes
Dr. Carlos E. Paz-Soldan

URUGUAY: Dr. Estenio Hormaeche
Dr. Federico J. Salveraglio

VENEZUELA: Mr. Enrique Gonzales-Navas
Dr. A. Lares-Gabaldon
Dr. Francisco Scannone
Dr. A. L. Briceno-Rossi

Among this group are the members of the faculty of six schools of public health who are conferring with faculties of public health in the United States and Canada under a plan worked out by the University of Michigan and the W. K. Kellogg Foundation. It is expected that an arrangement for the interchange of students between countries in the American hemisphere will be developed. Members of this group include: Alberto Zwanck, Professor of Hygiene at the University of Buenos Aires; G. H. de Paula Souza, Professor of Public Health at the University of Sao Paulo, Brazil; Carlos Enrique Paz-Soldan, Professor of Hygiene at the University of San Marcos, Lima, Peru; Federico J. Salveraglio, Professor of Hygiene at the Medical School, Montevideo, Uruguay; Mario Prado-Lefort, Vice-director of the Institute of Bacteriology, Santiago, Chile; and Hernan Romero, Professor of Preventive Medicine and Public Health at the University of Chile, Santiago.

DR. GRAYSON RESIGNS AS ARKANSAS STATE HEALTH OFFICER

William B. Grayson, M.D., who since 1933 has been State Health Officer in the Arkansas State Board of Health, has resigned, effective November 15, to enter private practice in Little Rock.

Dr. Grayson is succeeded by Thomas T. Ross, M.D., M.P.H., as Acting State Health Officer, who for seven years has been connected with the Arkansas State Board of Health as

Director of Maternal and Child Health. Dr. Ross is a native of Arkansas, a graduate in 1928 of the Tulane University School of Medicine, with a Master's degree in public health from Harvard School of Public Health in 1934.

WILLINK BECOMES BRITISH MINISTER OF HEALTH

The press on November 11 announced the appointment of Mr. H. U. Willink as Minister of Health of Great Britain, replacing Mr. Ernest Brown who now becomes Chancellor of the Duchy of Lancaster. According to the reports, Mr. Willink was in charge of the homeless in London during the blitz.

According to the *New York Times*, Mr. Willink will have a great deal to do with plans for rebuilding Britain, one-fifth of whose houses are said by the government to have been damaged since the start of the war.

In the same series of changes, Lord Woolton, who has been Minister of Food in Great Britain, has been appointed Britain's first Minister of Reconstruction, with a place of authority in the War Cabinet.

ILLINOIS UNDERTAKES SCHOOL HEALTH STUDY

Roland R. Cross, M.D., State Director of Public Health, Springfield, Ill., has announced plans for "the development of more effective, continuous, and coördinated public health programs in the schools." A joint committee has been set up representative of health and educational authorities, and a comprehensive study is planned of the existing assets and liabilities in the present school health programs throughout the state.

It was announced early in November that Clair E. Turner, Dr.P.H., Professor of Public Health at the Massachusetts Institute of Technology, Boston, would direct the study. The project was linked with the movement in Illinois for the establishment of home-rule county health departments by the *Illinois Health Messenger*, as well as with the work of the State-wide Committee on Public Health which was organized following the survey of Illinois made under the auspices of the Committee on Administrative Practice of the A.P.H.A. by Dr. Carl E. Buck, Field Director.

SCHOLARSHIPS IN NURSE EDUCATION AVAILABLE

Lucile Petry, Director of the Division of Nurse Education of the U. S. Public Health Service, has announced that the increased enrollment of student nurses resulting from the recruitment program of the U. S. Cadet Nurse Corps has intensified the need for qualified instructors in the country's schools of nursing. All-expense scholarships in nurse education have been made available under the Bolton Act to encourage postgraduate training for nursing school graduates who show a particular aptitude for teaching. Schools of nursing have been urged to select members from their graduating classes who show promise as instructors. These graduates have been encouraged to apply to colleges and universities offering the desired type of postgraduate nurse education. A list of the colleges and universities offering postgraduate study and details of the study programs offered by each may be obtained from the Division of Nurse Education, U. S. Public Health Service, Washington, D. C.

WOMEN SANITARIANS IN TEXAS

The *Texas Journal of Public Health* for September-October reports that the Department of Public Health and Welfare of the City of Fort Worth has employed three women sanitarians for a temporary period. Their work, it is said, has resulted in improving sub-

stantially the sanitation of food handling establishments, particularly in the business district.

VISITORS FROM ECUADOR

Among recent visitors to this country were Dr. Leopoldo Izquieta Perez of Guayaquil, the Director of Health of Ecuador, and Dr. Cornelio Donoso, the Director of the Municipal Health Department of Quito, Ecuador.

CHANGES IN STAFF OF THE MEDICAL DIVISION, OFFICE OF CIVILIAN DEFENSE

DR. COURTNEY M. SMITH,* Assistant Regional Medical Officer in the Ninth Civilian Defense Region, recently stationed in Seattle, Wash., has been promoted to be Regional Medical Officer with headquarters in San Francisco. He succeeds DR. FRED T. FOARD,* Senior Surgeon, U. S. Public Health Service, who has been made District Director, U. S. Public Health Service District No. 8, with headquarters in Denver. Prior to his appointment in the Medical Division of the Office of Civilian Defense, Dr. Smith was Assistant Health Commissioner of Alaska. He holds the rank of Surgeon in the U. S. Public Health Service Reserve.

DR. ARTHUR J. LOMAS, Deputy State Chief of Emergency Medical Service for Maryland, has been assigned as Regional Medical Officer for the Third Civilian Defense Region, which includes Maryland, Pennsylvania, and Virginia. Headquarters are in Baltimore. Dr. Lomas, who formerly practised medicine at Lutherville, Md., succeeds DR. MARK V. ZIEGLER,† Senior Surgeon, U. S. Public Health Service, who has been assigned to the U. S. Maritime Commission. Dr. Lomas has the rank of Surgeon in the U. S. Public Health Service Reserve.

DR. BENJAMIN MILLER, Assistant Professor of Medicine, University of Chicago School of Medicine, Chicago, was recently commissioned in the U. S. Public Health Service and assigned to the Washington staff of the Medical Division October 1, as Assistant Chief of the Scientific Research and Development Section.

LOUIS G. GOETZ, who came to the Medical Division as equipment officer in March, 1943, has entered military service. Before joining the Medical Division staff, Mr. Goetz was Assistant Comptroller at St. Luke's Hospital, New York, N. Y.

DR. WARD L. MOULD, Surgeon, USPHS, who has been assigned to the staff of the Medical Division, Office of Civilian Defense, since September, 1941, has returned to the U. S. Public Health Service. Dr. Mould served in various capacities in the Medical Division, most recently as medical chief of the industrial plant unit. He has been assigned temporarily as Assistant to the Director, U. S. Public Health District No. 1, with headquarters in New York, N. Y.

DR. VICTOR H. VOGEL, Surgeon, USPHS,† Administrative Officer of the Blood Plasma Unit of the Medical Division since its establishment early in 1942, has been transferred to the staff of the U. S. Public Health Service Hospital in Lexington, Ky.

PERSONALS

Central States

LEON H. FLANCHER, M.D., Epidemiologist, Division of Preventable Diseases (Tuberculosis Control), Minnesota Department of Health, has been appointed Director of the Division of Tuberculosis Control of the Iowa State Department of Health.

CHARLES F. MCKHANN, JR., M.D.,* has resigned from the faculty of the University of Michigan School of

* Fellow A.P.H.A.
† Member A.P.H.A.

Public Health, where he was Professor of Maternal and Child Health, to accept an appointment as assistant to the President of Parke, Davis & Company, Detroit.

LAURENCE T. ROGERS has been appointed Assistant Secretary of the Health Division of the Chicago Council of Social Agencies, Chicago, Ill.

CONRAD S. SOMMER, M.D., Chief Medical Officer in the Department of Public Welfare of Illinois, has been named Deputy Director of the Mental Hygiene Service, a newly created position. He is to supervise the twelve mental hospitals, the Neuropsychiatric Institute, the Division of Veteran Service and the Bureau of Home Economics and Nutrition.

HOLLAND THOMPSON, M.D., of Montgomery, Ala., Director of Tuberculosis Control for the State of Alabama, has been named Director of a new Tuberculosis Control Division, recently established by the Indiana State Board of Health to coördinate the work in the state against tuberculosis. At present all tuberculosis control activities of the State Board of Health are administered by the Communicable Disease Division.

Eastern States

MARY M. ATCHISON, M.D., M.P.H.,† formerly Director of the Divisions of Maternal and Child Health and Crippled Children's Services, New Hampshire State Board of Health, Concord, N. H., and recently Acting Deputy Secretary of the State Board, has been appointed Acting State Health Officer. Dr. Atchison fills the vacancy that occurred when ALFRED L. FRECHETTE, M.D., M.P.H.,† was granted a leave of absence as Secretary of the Board to engage in war rehabilitation work under the auspices of the U. S. Public Health Service.

MURIEL F. BLISS, PH.D.,* Hartford, Conn., has resigned from the staff of the Connecticut State Department of Health to become Executive Secretary of the Hartford Tuberculosis and Public Health Society, effective November 1. Dr. Bliss, who received her degree in public health from Yale in 1943, was formerly connected with the Cancer Committee of Nassau County, Long Island, N. Y.

DR. A. JOSEPH HUGHES, of Camden, N. J., has been named by the State Board of Health as Medical Assistant to State Health Director J. LYNN MAHAFFEY, M.D.,† to develop a preventable disease program.

ALFRED E. KESSLER,† Director of the Buffalo Junior Chamber of Commerce, Buffalo, N. Y., has been appointed Chairman of the U. S. Junior Chamber Public Health Committee. Mr. Kessler is Health Education Secretary of the Buffalo and Erie County Tuberculosis Association.

WILLIAM E. MOSHER, JR., M.D.,† of Cortland, N. Y., has resigned as Health Commissioner of Cortland County to enter the armed services.

M. W. YALE, PH.D.,† formerly with the New York State Agricultural Experiment Station in Geneva, N. Y., is now Bacteriologist with the Shefford Cheese Company in Green Bay, Wis.

Southern States

RICHARD E. BANNER, M.D., of Kansas City, Mo., has been named head of the Health Unit in Johnson County, with headquarters at Warrensburg, Mo.

DOROTHY DAVIS BRYAN, of Nashville, Tenn., has been appointed to succeed the late HALE E. CULLOM, M.D., as Director of Sight Conservation and Prevention of Blindness for the State of Tennessee.

* Fellow A.P.H.A.
† Member A.P.H.A.

TILMAN E. DODD, M.D.,† of Bryan, Tex., has resigned as Health Officer of the Bryan-Brazos County Health Unit.

ROBERT H. HUTCHESON, M.D., C.P.H.,* of Nashville, Tenn., Assistant Commissioner and one time Superintendent of the Williamson County Health Unit, has been appointed State Commissioner of Public Health. He succeeds WILSON C. WILLIAMS, M.D., C.P.H.,* of Nashville, who accepted a commission as lieutenant colonel in the Medical Corps of the Army and who has been ordered to active duty.

ESTELLA LUCILLE JOHNSON MARSH, M.D., of Tallahassee, Fla., has been appointed Director of the Bureau of Maternal and Child Health of the Florida State Board of Health. Dr. Marsh has been serving as Chief Physician at the Florida State College for Women, Tallahassee. Since the resignation of ROBERT C. HOOD, M.D.,† of Jacksonville, to enter private practice in Arlington, Va., in 1942, the Bureau of Maternal and Child Health has been in charge of ERWIN F. HOFFMAN, M.S.P.H.,† Director of the Bureau of Epidemiology.

RITA MILLER has been appointed Consultant on Negro Nurse Education in the Division of Nurse Education, U. S. Public Health Service, Washington, D. C. Miss Miller is on loan from Dillard University, New Orleans, La., where she is Chairman of the Division of Nursing.

BENTON M. MONTGOMERY, M.D., has been named Director of the Clarendon County Health Department, succeeding EDWARD ALEX HEISE, M.D.,† who is now in charge of the Sumter County and City Health Departments. Dr. Montgomery is also Director of the Williamsburg County Health Department.

LUTHER A. RISER, M.D., of Sedgefield, N. C., has been named Director of the Bureau of Vital Statistics of the South Carolina State Board of Health, to succeed MARTIN B. WOODWARD, M.D.,† of Aiken, who resigned to accept a similar position in West Virginia.

JOHN SCHREIBER, M.D.,† of San Augustine, Tex., has been named Health Officer of Nolan County.

ELMER J. TEAGARDEN, M.D., of Orlando, Fla., has been appointed Director of the Florida State Board of Health's Bureau of Tuberculosis. Dr. Teagarden has been serving as Superintendent of the Morgan County Tuberculosis Sanatorium, Flint (Decatur P. O.), Ala., and succeeds LYNNE E. BAKER, M.D.,† of Jacksonville, who resigned to enter private practice in Dayton, Ohio, last July.

RUSSELL M. WILDER, M.D., Chief of the Civilian Food Requirements Branch of the Food Distribution Administration, Washington, D. C., has resigned. Dr. Wilder will return to his work at the Mayo Clinic, Rochester, Minn., but will serve as medical adviser to the administration.

CAMILLA LOUISE WILLS,† of Towson, Md., was appointed to join the faculty of Lander College, Greenwood, S. C., to teach and be head of the Biology Department.

THOMAS V. WOODRING, M.D., Assistant Health Officer of Nashville, Tenn., for more than 15 years, has been appointed Director of Health of Nashville, a position recently created under a revision of the charter for the city. JOHN OVERTON, M.D.,† will continue as City Health Officer.

KENNETH J. WULFERT,† of Clayton, Mo., Assistant Public Health Engineer of the St. Louis County Health Department, has been commissioned a Second Lieutenant in the U. S. Army Sanitary Corps and has

* Fellow A.P.H.A.
† Member A.P.H.A.

been granted a leave of absence from the Health Department for the duration.

Western States

WARREN H. GARDNER, PH.D.,† who has been Consultant in Hearing and Vision in the Oregon State Board of Health since August, 1940, has been appointed to the newly created position of Specialist in Hearing Conservation in the Bureau of Maternal and Child Health in the California State Department of Public Health, effective September 21, 1943. California plans a state-wide program of hearing conservation to be developed as an integral part of the Public Health program.

SALLY LUCAS JEAN,* who has recently served with the War Relocation Authority in Poston, Ariz., has accepted a position as Consultant in Health Education with the National Foundation for Infantile Paralysis, 120 Broadway, New York, N. Y.

S. EDWARD SULKIN, PH.D.,* has resigned as Director of the Virus Laboratory, St. Louis Health Division and Instructor in Bacteriology, Washington University School of Medicine, and has accepted a position as Associate Professor of Bacteriology, Southwestern Medical Foundation School of Medicine, Dallas, Tex.

Great Britain

ROBERT HUGHES PARRY, M.D.,* Medical Officer of Health of Bristol, England, was elected an Honorary Fellow of the American Public Health Association at the 72nd Annual Meeting in New York City. Dr. Parry spent several months in the States during the spring and summer of 1943, during which time he attended 17 meetings of public health workers. Dr. Parry recently has been elected a Fellow of the Royal College of Physicians in England.

Deaths

WALTER W. COUNCIL, M.D.,† Territorial Health Commissioner, Juneau, Alaska, died November 13.

W. BROWNLEY FOSTER, M.D.,* Director of Public Welfare, Richmond, Va., died in August, 1943.

JAMES R. MCEACHERN, M.D.,* Health Officer of Tampa, Fla., died November 1.

THOMAS ANDREW STOREY, M.D., representative in the southern states for

* Fellow A.P.H.A.
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the American Social Hygiene Association with headquarters in Atlanta, Ga., died on October 27, in Atlanta, at the age of 68. Dr. Storey was formerly Director of the School of Hygiene at Stanford University, California. Dr. Storey was a life member and Charter Fellow of the American Public Health Association.

H. VON WEDEL, Sc.D.,* of New Rochelle, N. Y., died recently. He was Director of the New Rochelle Hospital Laboratory.

IRA S. WILE, M.D.,* of New York, N. Y., died October 9, aged 65.

CONFERENCES AND DATES

American Association of Schools of Social Work. Indianapolis, Ind. January 27–29.

American Library Association — Midwinter Conference. New York, N. Y. December 4–5.

American Society of Anesthetists. New York, N. Y. December 9.

American Society of Heating and Ventilating Engineers—50th Anniversary Meeting, New York, N. Y. January 31–February 2.

American Water Works Association
New York Section—Hotel Commodore, New York, N. Y. January 18.
Minnesota Section—Lowry Hotel, St. Paul, Minn. March 13–17.
Michigan Section—Otsego Hotel, Jackson, Mich. April 26–28.
New York Section—Hotel Utica, Utica, N. Y. April 27–28.

National Fire Protection Association. Philadelphia, Pa. May 8–11.

National Restaurant Week. May 8–14.

National Society for the Prevention of Blindness. Russell Sage Foundation, New York, N. Y. December 2.

Pan American Health Day. December 2.

Radiological Society of North America. Chicago, Ill. November 29–December 3.

Seaboard Medical Association. Richmond, Va. November 30–December 2.

Social Hygiene Day—American Social Hygiene Association. February 2.

United States Livestock Sanitary Association. Hotel La Salle, Chicago, Ill. December 1–3.

* Fellow A.P.H.A.

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AMERICAN JOURNAL OF PUBLIC HEALTH and THE NATION'S HEALTH

Volume 33 DECEMBER, 1943 Number 12

Annual Index

Published Monthly at 374 Broadway, Albany 7, N. Y., by the

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